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Communications and Cases.

SYNOPSIS OF CONTINENTAL VETERINARY
JOURNALS.

By JOHN HENRY STEEL, Demonstrator of Anatomy at the
Royal Veterinary College.

(Continued from vol. li, p. 783.)

Summary.—From the *Recueil de Médecine Vétérinaire* of 15th November, 1878:—*M. Bouley's* résumé of the discussion before the Congrès National Vétérinaire, "On the best means of Organization of a Veterinary Sanitary Service." Also *M. Colin's* communication to the Académie de Médecine, "On the Neutralization of Virus in the Organism." *Dr. Krishaber's* "New Form of Tracheotomy of the Horse." Veterinary Honours and Appointments to Professorships. Union of the Veterinary Societies of France, and the adoption of the *Recueil* as their organ.

From the same journal of 30th November, 1878:—Discussion between *MM. Bouley* and *Sanson* on Didactylism in the Horse.

From the *Annales de Médecine Vétérinaire* for December, 1878:—*M. Migeotte*, "On a Horny Monstrous Growth from the Limb of a Foal, causing Lameness; *M. Sanson*, "On Irregularities of the Spinal Column of Equidæ."

The second question brought before the Congrès

National Vétérinaire was, "The best means of Organization of the Sanitary Veterinary Service in France, and the means of ensuring its effectual working." In an elaborate *mémoire*

"*M. Verrier, of Provins*, showed the importance of a sanitary service from the double point of view of the interests of the public and of veterinarians, whose influence and position it would improve. Veterinarians ought, therefore, to give their aid to the Government to ensure the best possible adaptation of this service to its objects. According to the ministerial circular, a departmental veterinarian should be stationed at some central place, and there should be provincial veterinary officers. But ought all veterinarians to belong to this service, as in the Department of Seine-et-Marne or ought certain of them to be selected for these duties? The best method of deciding this would be for the authorities to name veterinary surgeons for the sanitary service from lists drawn up by veterinarians assembled for this purpose. Thus, by universal suffrage selections would be made, and from such persons selected the authorities might choose those most fit to perform the duties.

"*M. Cam. Fleury, of Chaumont*, considered all the veterinarians of a department ought to be considered as members of the sanitary service, and should give it their aid.

"*M. Em. Thierry*, as delegate of the Department of the Yonne, thus formulated the opinion of his confrères: 'There should not be a departmental veterinary surgeon, but only veterinarians of districts, elected by their brother practitioners of the district, and together forming a *consulting committee* in serious cases; also having the power of asking the assistance of all veterinarians, and of leaving, in urgent cases, in the hands of the préfet, the power of consulting the nearest veterinary surgeon.' The 'veterinarians of epizootics' actually in practice in the five districts of the Department of the Yonne have been named on the proposition of the Councils of Hygiène respectively, instead of by their peers, which would have been preferable. These veterinarians fill in turn, yearly, the office of inspector-general of epizootics. Thus, satisfaction is given to the expressed wish of the minister in his circular, that a departmental veterinary officer should unify the service of epizootics; but this post, instead of being filled by one man, is filled by the veterinarians of the district. This is hardly sufficient, for it causes discontent; instead may be proposed (1), that veterinarians of epizootics be appointed for two years only; (2) that the nominations should fall in turn on all registered veterinary sur-

geons; (3) that the inspecting veterinary surgeon should continue to be named by the *préfet*, but on the presentation of one or two members chosen by veterinarians of epizootics.

“*M. Rossignol, of Melun*, would like to see established in each *préfecture* a departmental committee, presided over by the departmental veterinary surgeon, and composed of veterinarians of districts named by their confrères. The departmental veterinary surgeon should be selected by competition, and all practitioners in the department should share in the sanitary service. Hence it ought not to be necessary to pass an examination for the office of district veterinarian. The diploma ought to be a sufficient guarantee.

“*M. Viseur, of Arras*, also is of opinion that all veterinarians ought to belong to the service of epizootics, with the selection of higher officers by competition. That system, while giving to all equally a share in the sanitary service, would involve the institution of a council of discipline, which would have jurisdiction over any slips in the performance of these voluntarily accepted duties.

“*M. Quivogne, of Lyon*, communicated to the congress the resolution of the *Society of Veterinarians of the South and South-east* of France in favour of the system of a principal veterinarian of epizootics in each department, under whom should serve as members of the sanitary service all veterinarians who are members of the society.

“According to *M. Grislet, of Toulouse*, all the veterinarians of a department should assist in the sanitary service, but centralisation should be brought about by a ‘consulting committee on epizootics,’ similar to that which assists the Minister of Agriculture, rather than be entrusted to a single veterinarian the chief officer of the service. The aid of many would be preferable to the action of one man.

“*M. Tanguy, of Landernau*, an old advocate of the necessity for *departmental service of epizootics*, developed before the congress a complex system, in which he introduced the agricultural societies and assemblies, for institution of prizes of encouragement for the most deserving agriculturists; and he suggested also a system of mutual assurance, communal or cantonal, whereby the proprietors of cattle might obviate the losses which mortality too frequently inflicts upon them. Instruction in public schools of the principles of hygiene and of zootechny would guarantee care of live stock. Finally, cattle lairs, markets, slaughter-houses, and knackers’ yards should be submitted to inspection, performed only by veterinary surgeons. All the veterinarians of a department should belong to the service of epizootics.

"*M. Dubourg*, delegate from Lot et Gironne, supported *M. Griolet's* system—all veterinarians, without distinction, belonging to the service of epizootics, a consulting committee centralising the service ; no departmental veterinary surgeon.

"*M. Leblanc*, of *Paris*, protested against the equal distribution advocated by most of those who had taken part in the discussion. Equality here would amount to anarchy, which would oppose the efficacy of the service. The duties of the sanitary service ought to be given to the most deserving. He would prefer that the election of a departmental veterinary surgeon, an indispensable post, be made by competition, such a method of nomination being preferable to simple election, as ensuring the successful competitor the consideration which results from a scientific competition sustained against deserving opponents. Thus nominated, the departmental veterinarians would be in a position to be accepted everywhere. As for veterinarians of cantons, they ought also to prove, not by a true competition, but by an examination, whether they have the necessary qualifications for the appointment."

A number of other gentlemen successively supported the necessity for constitution of the sanitary service of veterinarians of cantons, having at their head a departmental inspector as a means of centralisation. As for the mode of nomination of officers opinions were divided between examination and simple election.

This discussion is formulated in the following vote, carried at the Congress by a large majority :

"The Congress considering that, to efficaciously combat epizootics, it is beneficial that veterinarians be called to assist in the sanitary service, votes that this service, in each department, be composed of all the veterinary surgeons practising in the department, and that this service should be directed by a departmental veterinarian, who should be chosen by his confrères assembled for this purpose."

"In supporting this system the majority adopting it was impressed with the difficulties of the selection for the post of veterinarian of the canton, and especially of the dangers of rivalry between those on whom the sanitary duties fall and their brother practitioners not in the service, who could not without uneasiness see the entry among their clients which the exigencies of the service would entail. In those localities, and there are many, where there are only two or three practitioners in a canton, the nomination of one to the exclusion of so few others to the post of cantonal veterinary surgeon would seem to be appointment of one to *too* high an elevation above his competitors for practice (*i. e.* for exist-

ence), who would thus be prejudiced. If we consider this matter from the point of view of country practice it will seem certain to us that these considerations have their value, and that, in consequence of the small number of veterinarians who carry on professional business in the country, distribution of the sanitary functions between them would be productive of more advantages than real inconvenience; while giving all satisfaction to *amour propre*, it has the advantage of associating all the veterinarians of the country service by their own consent, and of thus imposing on them legal obligations, in the performance of which they would be the more strenuous, because any laxity would be aggravated in consequence of the official character which they have to support; '*Noblesse oblige*' says the old proverb; it here finds an application. From the time when any one is delegated to the sanitary service he accepts all its obligations, and thus undertakes the scrupulous execution of the regulations of the law in all its rigorous applications. But, it is said, has this system not the inconvenience of mixing incapable and unworthy personages to superintend matters for the performance of which the highest qualifications ought to be employed? Without doubt; but happily these are only exceptions, and there is an easy remedy in necessary erasures. Also the *modus agendi* supported by the Congress is not without having been put to the proof already; it is actually flourishing in Seine-et-Marne, Seine-Inférieure, and Orne, as we were told at the Congress, and, without doubt, in other departments. We must wait, before pronouncing on its practical value, to see what will follow the execution of the law of intervention, and of all the duties it will impose on the veterinarians appointed to the sanitary service. Allowing the principle of equality of veterinarians in the distribution of the duties of this service, the Congress has sanctioned the necessary principle of hierarchy by asking that the sanitary service be placed under the direction of a departmental veterinary surgeon, charged with the duty of centralisation, and through whom might be established the relations of the service with the administrative authorities. We approve of this resolution of the Congress, but we doubt whether it has selected the best mode of nomination for this superior post. Direct election has the serious inconvenience of preventing the prefectoral authority from any participation in the nomination of the chief officer of the sanitary service, who ought to always be in close relations with this authority. Here is a position difficult to accept, which may probably prevent the vote of the Congress from being carried into

action. It would have been preferable that the nomination of departmental veterinary surgeon should be made by the préfet from a list drawn up by the veterinarians called together for the purpose. So all rights and all interests would have been protected, and, thanks to that double election, the holder of the appointment would unite all conditions for recognition of his authority and efficacy of his influence. It is also by a similar method that the departmental veterinarian of Seine-et-Marne has been named, and that nomination which resulted in the appointment of M. Verrier, of Provins, may be considered as a good testimony in favour of the system which it serves to illustrate."

M. COLIN recently communicated to the Academy of Medicine the results of many experiments which he has made on the neutralisation of virus in the organism. The aim of these was to ascertain if, when once the organism has become impregnated with a virulent agent, it is possible to destroy its action in the organism itself, as may be done in a vessel in the laboratory, by direct contact of virulent matters with the substances which are capable of destroying the special activity which these matters possess. The anti-ferments or anti-virulents with which M. Colin has experimented are iodine in large doses, or iodide of potassium, carbolic acid, sulphuric acid, borax, sulphate of iron, and sulphate of quinine. His experiments were made on forty animals—rabbits or rats. The virulent matter employed was that of charbon. The operation consisted in introduction by means of the lancet of the charbonaceous matter into the ear or the tail, which were amputated at the end of ten minutes, and the almost immediate injection into the cellular tissue of the substance to be experimented with in doses of a certain number of milligrammes per kilogramme of the weight of the body. M. Colin thus summarises his conclusions:—
“ Could the results which I have submitted to you have been absolutely foreseen? Ought we not to have expected otherwise with such powerful agents as iodine, phenic acid, hyposulphite of soda, and sulphate of quinine? Should we not reasonably have hoped that such agents would at least have been an obstacle to the development of charbon, that they would have impeded its progress or lessened its gravity, since they were introduced into the organism at the very time when the morbid principle commenced its attack? They have been able to do nothing, either in small or in large proportion, administered once or many times, at the commencement, or at the height of the virulent intoxication, however small may have been the quantity of virus adminis-

tered, a quantity often reduced to a minimum by amputation after a short time of the part in which the virus had been deposited. Finally, these presumed anti-virulent agents have not even appreciably diminished the contagion-bearing power after a great number of successive transmissions or of virulent generations. Charbonaceous blood taken from the first animal operated upon affected the second, and blood from that a third. In the series of experiments, extending over a month, fifty experimental cases of production of virus were utilised; four were treated with hyposulphite of soda, six with iodine, the others by sulphate of quinine or carbolic acid. The charbon was not destroyed; its power underwent no sensible diminution at each of its transmissions; it always destroyed as rapidly as if it had originated naturally or had appeared spontaneously. At the end it had all the severity it manifested at the commencement of the experiments; thus, after the fiftieth generation, it caused death at the end of twenty-four hours."

M. Bouley, while admitting the value of these experiments, considers them as by no means thoroughly applicable to the human subject; considering the liability of the system of the rabbit to septic infection, no time is allowed for the action of remedial agents. But in man the time of incubation during which the system contends against the septic invasion enables, or may enable, antiseptics to produce anti-virulent effects.

Dr. Krisaber communicated, at the meeting of 29th October of the Academy of Medicine, a "New Method of performing Tracheotomy in the Horse," which he terms Subcricoid Tracheotomy. He claims for it the following beneficial effects:—It gives an artificial passage for air to supplement that gained through the natural passages when such are obstructed. The ascending branch of the tube used serves to separate the vocal cords, and so to give the glottis dimensions by which it may freely subserve respiration.

Another benefit urged is that an animal wearing such a tube permanently might be freely used, since the tube, being high up, would not be so conspicuous as the ordinary tube. The operation may be readily performed. The crico-tracheal depression may be easily distinguished beneath the skin, and exposed by simple incision through the integument. But, *M. Bouley* asks, would not the up-and-down movements of the head result in the friction of the branches of the tracheotomy tube against the lining of the trachea, leading to inflammation and sphacelus? And we would ask whether the sensitiveness of the upper part of the larynx would allow

such mechanical dilatation of the rima glottidis? Dr. Krishaber says he has found the operation very simple on dead animals and equally simple on two animals on which he operated shortly before slaughtering. *M. Bouley* recommends this as a matter for experimental investigation.

M. Cirotteau, veterinary surgeon of Poitiers, has been elected to the Legion of Honour on the occasion of his performance of duties as one of the Judges of the Horse Show in connection with the Paris Exhibition. He had other claims to this honour, having been several times recommended to the Minister of Agriculture by the General Council of the Department of Vienne for the great services rendered by him when, as chief sanitary officer, he succeeded in arresting the cattle plague during the outbreak of 1871. "Others of our confrères deserve a similar recognition of their services during the same outbreak, and though their names are on the list of proposal for the same award they have not yet received it; but this is a debt which cannot remain unpaid." In the same Gazette *M. PASTEUR* is promoted to the rank of 'Grand Officier.'

M. Laulanié has been appointed to the "Chair of Anatomy of Domesticated Animals, and External Configuration of the Horse" at Toulouse; and *M. Nocard* has been appointed to the recently created "Chair of Surgical Pathology and of Clinical Teaching" at Alfort. We learn from the Brussels *Annales* that, by a royal warrant of 12th August, 1878, the veterinary physician, *Prosper Dewilde*, Professor at the Military School and at the University of Brussels, has been appointed a Chevalier of the Order of Leopold, and also (as having been one of the judges at the Paris Exhibition) a Chevalier of the Legion of Honour.

One of the most marked effects of the Congress in Paris has been the attempt, which shows every prospect of success, to unite all the veterinary societies in France by the appointment of the *Recueil de Médecine Vétérinaire* as the bulletin of the societies, and of *M. H. Rossignol*, the chief secretary of the Congress, as manager of this section of work. In the *Recueil* he says: "In my post as chief secretary, and to act up to the vote of the Congress, 'That veterinarians in every place be invited to form associations of mutual aid, according to the principles of that which exists in the south-east and east of France, and that as soon as possible all the societies put themselves in relation with each other by delegates, who shall fix the price of a moderate subscription, uniform throughout France,' I have thought right, in a cir-

cular of 1st October, to invite all societies of veterinarians to examine this resolution, and already many associations have answered this appeal.

“A bulletin of the meetings of veterinary societies is, indeed, the best means of supporting the interests of the professional body; it will have the great advantage of always keeping the members of the profession *au courant* with the efforts which our friends are everywhere making for the advancement of the profession. Such a summary, which I will endeavour to make as faithful as possible, will place in permanent relation with each other the veterinarians of all parts of France, and will be a step towards that general association which now is only a project, and shortly will be a reality.”

At the sitting of 14th November, before the Central Society of Veterinary Medicine, an interesting passage of arms occurred between *MM. Bouley* and *Sanson* on a communication which at the previous meeting had been made by M. H. Benjamin, on a horse with special development of one of the digits which are under ordinary conditions rudimentary. *M. Bouley* commenced by stating that the case was one from which important general scientific deductions might be drawn. The animal was wild, and the case might be considered one of *atavism*. The animal in question resembles the hipparion; its wild condition would have favoured its recurrence to original type, to those characters presented by the horse of that Tertiary epoch whose fauna and flora have disappeared leaving those of the quaternary period which we see in the present day. He would refer M. Benjamin to M. Gaudry's interesting writings on equine palæontology. *M. Sanson* would not join M. Bouley in recommending a line of observation into which it would not be prudent to enter. The case cited presents none of the characters of *atavism*. It is simply a fresh case of polydactylism, to be added to those which science already possesses, and which are represented in most of the museums of Europe. The horse described is as like the horse as it is to the hipparion. He has seen at Utrecht an ox with its right hind limb divided as far as the hock. *M. Bouley* was not yet convinced; but *M. Sanson* was on a special subject of his. There are human families characterised by being six-fingered, and this has never been considered as an illustration of *atavism*. We never find cases of fossil two-fingered horses; we only know the hipparion with three fingers. Science has to do with the positive interpretation of facts, and not with logic. “I will never encourage a young worker to deviate from the line of observa-

tion and experimentation to enter that of pure speculation."

We seldom find that such irregularities result in lameness; but at the meeting of the Veterinary Society of Namur of 28th July *M. Migeotte*, president, exhibited a monstrous produce of a horny nature, which had appeared on the level of the button-shaped inferior extremity of a rudimentary metacarpal of a foal. Its structure resembled that of the hoof in every respect, and its figure resembled a slightly-curved goat's horn. The foal was lame, and *M. Migeotte* attributed the lameness to pain on the level of the rudimentary metacarpal, since the imperfect hoof touched the ground when the animal walked."

We observe in the *Annales* of December, 1878, some "*Notes on the Irregularities of the Spinal Column of Equidæ*, by *André Sanson*, Professor of Zootechny; from the *Journal de l'Anatomie et de Physiologie*.—Anatomists have hitherto included under the term '*anomalies*' irregularities either in the number or in the form of the vertebræ which constitute the spinal column. *M. Sanson*, in this paper, opposes the use of such an unscientific term, which, with *M. Chevreul* he considers equivalent to '*ignorance*.' He is of opinion that these irregularities depend upon hereditary tendency being disturbed, or from the conflict resulting from the union of two types. To understand this we must recall to mind that the author considers that there are in the natural group of *Caballine Equidæ* two distinct rachidian types, with the formulæ:—1st. $7 + 18 + 6 + 5 = 36$ vertebræ; 2nd. $7 + 18 + 5 + 5 = 35$ vertebræ. To the first type belong seven varieties of natural horses. The second type includes only the *Equus Caballus Africanus*, whose natural geographical range borders on that of *E. C. Asiaticus*. These two species are Oriental, and generally known under the common term 'Arab horse.' It is rare to meet with subjects of these two species entirely pure in the countries which they inhabit together. 'These two types are Brachycephalic, but their facial forms are markedly different. Thus, the forehead in the Asiatic is flat, with the orbital arch prominent and the lachrymal depressed. In the African the forehead is arched, the orbital arch obscured, and the lachrymal curved. In the English race horse, produced by the introduction into England of the Oriental stallion, the mixture of these facial forms shows itself frequently as the result of plasticity (*atavisme*), since the subject inherits one or many of the bones of the face from one of the ancestral types, and the rest from the other. But in the parts of the skeleton where

the difference depends upon the number of the component pieces of the spinal column, the effects of crossed heredity cannot show themselves in the same manner. Three conditions only can occur; either one or the other of the two types reproduces itself distinctly defined, or else there is a conflict between the two, and consequently irregularity in the rachidian forms.³ These irregularities are almost infinite.' M. Sanson has, in his *Treatise on Zootechny*, indicated many forms of irregularity. He recounts in the present work a new observation based on the examination of the skeleton of an Oriental horse termed 'Emir' in the French studs.

"In the skeleton of Emir the total number of pieces of the rachis is thirty-six; this is the number found in one of the natural types. The irregularity results from their arrangements in the four spinal regions. There is one less than usual in the dorsal, and one more in the sacral region. The last dorsal, which normally scarcely differs from the first lumbar except in the form of the transverse process, which bears a rib articulated with it, in this instance has become lumbar in consequence of the absence of this articulation, its horizontal arrangement, and its flattened form. The analogy of the rib with the costiform apophysis (transverse process) of the lumbar vertebra easily explains these forms of variation, which are very frequent. Generally that apophysis assumes in the first lumbar vertebra of subjects of Oriental origin at least by one of their ascendants, the figure and direction of the posterior external ribs. On the other hand, we can see that the last dorsal in the case of descent perverted by crossing of two types differing in the arrangements of these parts may have transverse appendages of a lumbar type rather than asternal ribs. The six lumbar vertebræ of Emir exhibit the regular form of the the natural type with thirty-six vertebræ. The bone which should have been the last lumbar has become the first sacral, not only by its articulation with the ilium, but also by the direction of its superior spinous process. This process in the true lumbar vertebræ extends obliquely downwards and backwards like that which precedes it, but in the first sacral the obliquity is in the opposite direction, so that between the last lumbar and first sacral there is a triangular space with its base superiorly placed, sharply marking the division between the two parts of the rachis. In *Emir* the first sacral has all the sacral characters, but is not fused with the next bone behind, as is usual. The same condition obtains in the last, which in this case is the sixth sacral. We see, then, that the

skeleton of Emir does not depart fundamentally from the natural types, and that the peculiarities which it presents can by no means be termed anomalies, even if the word were scientifically acceptable. By the number of vertebræ it exhibits the characters of the thirty-six vertebral type. It differs only in the form of the twenty-fifth and of the thirty-first vertebræ, of which the former presents the features of the first lumbar in place of those of the last dorsal, and the latter those of the first sacral instead of those of the last lumbar. The distribution of the vertebræ between the different regions of the spine only is irregular.”

THE PRINCIPLES OF BOTANY.

By Professor JAMES BUCKMAN, F.G.S., F.L.S., &c. &c.

(*Continued from vol. li, p. 649.*)

FROM the foregoing remarks it will be judged that the *Umbelliferæ* include plants possessing very useful properties, though occasionally species are met with of a highly dangerous character. Several poisonous species become not only inert, but highly wholesome and nutritious, as the result of cultivation. Thus, the parsnip, which was adverted to in our last as a mild esculent vegetable in the wild state, has a root which is so powerful as to be disagreeable, and which would doubtless have at least an energetic medicinal action. The carrot, again, whose cultivated root is so agreeable, is yet strong and unpleasant in its wild state, while its seeds are used as an active stimulant and diuretic.

Celery, again, which daily appears at our table in the raw state, is a poison in its wild condition, both its herbage and its seed possessing very active principles, so much so that a little of the green plant is enough to flavour soup, and a few seeds tied in muslin is very often used for the same purpose.

Hemlock grown in the garden and blanched like celery is said to be eaten by the Russians in the same way as we do celery, either raw as a salad, or stewed as a pot herb, and it is yet so destructive of life that a single leaf given in mistake for wild parsley will kill a rabbit; while for its effects upon man we cannot resist quoting Mrs. Lankester's wonderful description of its powers, in doing which we feel sure she

will pardon us if we think the late learned doctor was largely consulted in its production :

“ The hemlock is such a dangerous plant that all people living in the country should make themselves acquainted with its appearance. It is very abundant in most parts of Great Britain, and to the uninstructed looks very like cow-parsley or many other harmless herbs. Its poisonous principle, which is alike dangerous to man and animals, resides chiefly in the roots and leaves, and may be extracted by water. Its energy varies according to season and locality. The active principle is known to chemists under the name of *conia*. It is an alkaloid, and is very soluble in alcohol and other allied agents, combining with diluted acids to form salts. It is much employed in modern medicine as an anti-spasmodic and anodyne, and in the last edition of the ‘British Pharmacopœia’ we find it prescribed in several forms.

“ It is used in diseases of the glands, in scrofulous and cutaneous disorders ; but it is far too powerful a remedy to be employed by any but a regular practitioner. Dr. Christison’s experience is that *conia*, whether free or combined, is a most powerful poison. Dr. Taylor tells us that it exists in hemlock ; it undoubtedly operates by absorption, yet when insulated it destroys life so rapidly that it must be supposed to kill without entering the blood.

“ It produces general palsy without insensibility, and with slight occasional twitches only of the limbs of the animal. He says : ‘ It is singular that the heart does not appear to be affected by the poison, as this organ pulsates even after other signs of life have ceased. Death appears to be due to asphyxia, from the general paralysis of the respiratory muscles.’

“ A single drop of *conia* applied to the eye of a rabbit killed it in nine minutes, and three drops killed a strong cat in a minute and a half. Cases of accidental poisoning by hemlock are not unfrequent, generally from its being mistaken for other herbs. Orfila relates an instance where some soldiers ate it in soup. They appeared as if intoxicated. The one who had eaten most became senseless in less than two hours after swallowing the poison, and though emetics were soon administered he died in three hours.

“ In some cases it causes paralysis. Dr. J. Hughes Bennett relates a case of a man eating a quantity of hemlock in mistake for parsley. Soon afterwards he was seized with paralysis of the lower extremities, then of the arms and body, and three hours after having eaten it he died. These accidents should deter any one from allowing hemlock to grow

in gardens or fields where it is likely to be picked by children or ignorant persons. Even the common schoolboy practice of making whistles of the hollow stems of this and other umbelliferous plants is dangerous and should be discouraged.

“When dry and mixed with hay the plant seems to lose many of its active properties, for cattle and sheep will eat it in this state with no bad results. John Ray tells us that the thrush will feed on the seeds of the hemlock without harm; but this observation requires confirmation, though the action of the plant varies greatly on different animals. The hemlock being an abundant wild plant in Britain, is seldom cultivated.

“When collected for medical purposes the leaves should be collected in the month of June, just before the flowers expand, dried quickly in the sun or on tin plates before the fire, and kept in strong bags or vessels excluded from the light.

“The hemlock was well known to the ancients, being probably the *κωνσιον* (*koncion*) of the Greeks. Much discussion has taken place as to whether this was the plant used to poison Socrates, or whether it was the water hemlock, *Cicuta virosa*; but competent judges have considered that the description of the poison and its effects given by Plato in the ‘Phædon’ agrees better with what is known of the common hemlock than with any other plant. The *κωνσιον* (*koncion*) was the usual poison given to those sentenced to death by the Areopagites, and is supposed to have formed an ingredient in the poison cup taken by the old men of Ceos. The conium is probably also the ‘root of hemlock digged i’ the dark,’ which entered into the witches’ cauldron, so vividly described by Shakespeare. Dr. Prior gives us the spelling of the hemlock as used by Gerard; he says: ‘Homlock, coming, he supposes, from *haem* or *healm*, straw, or *haulm* and *leac*, plant, so called from the dry hollow stalks that remain after flowering.’ Gerard says: ‘Homlock is a very evill, dangerous, hurtful, and poysonous herbe, insomuch that whosoever taketh of it into his body dieth remedillesse, except the party drinke some wine, that is naturally hot before the venom hath taken the heart, as Pliny saith; but being drunke with wine, the poison is with greater speed carried to the heart, by reason whereof it killeth presently; therefore not to be applied outwardly, much lesse taken inwardly into the body.’ We are told that the first physician who endeavoured to bring hemlock into repute as a medicine, and who worked out its properties, was Baron Stoerck, of Vienna, who announced his discovery in 1760. Since that time it has

been generally admitted into the list of medicinal poisons or remedies.”*

Water hemlock (*Cicuta virosa*) has the reputation of being even a more powerful poison than the common hemlock. Fortunately it is nowhere a very abundant plant, and when it occurs plentifully animals seem to be repelled from partaking of it on account of its strong and nauseous taste. It is by some reputed to be the plant which was used for the poisoning of Socrates. It has the country name of cowbane, which was probably derived from the fact that in former times, when wet and marshy places were more abundant than they are at present, some of this most virulent plant may have led to accidents to cattle partaking of it. It was formerly used as a medicine, but is now never employed, even in country herbal practice, except now and then, in the shape of a poultice, for rheumatism.

Goatweed (*Ægopodium podagraria*) is common to old ruins and old-fashioned gardens, where it was at one time in constant request as a remedy for the distressing malady from which it is named. Indeed, it was once held in so great repute that it was said, like Morison’s pills and other quack remedies, to be the only universal remedy capable of curing all the ills that flesh is heir to—

“The itch, the stich, the palsey, and the gout,
And if the very Devil’s in this herb will fetch him out.”

Mrs. Lankester tells us that it is sometimes called bishop’s-weed, from the fact of its being often found in ecclesiastical ruins. Alas! for such a herb of grace; it is at present only esteemed as a bore in the shape of an irrepressible weed, both in the garden and in the churchyard.

It would take too long to dwell upon the qualities of the different native genera and species of this extensive order; but, as we have already referred to the stimulating qualities of the seeds of some of the species, these virtues depend upon a store of essential oil which is for the most part found in the seeds.

The seeds of the Umbelliferæ are in pairs or in two pericarps or carpels, each of which is marked by five ridges or lines; when the elevated ridge is absent they are very different in shape, as may be seen on examining the flattened but smooth seeds of the parsnip, or the curiously setose ones of the carrot. Within the coat of the carpels, usually between the ribs, are situated ducts or canals, of a more or less oblong

* See ‘English Botany,’ vol. iv, p. 174-5

shape, called *vittæ* which are usually filled with an oily or resinous matter in the coriander, having the smell of a crushed bug, but in the dried seed being so highly aromatic as to cause it to be used as a sweetmeat. The caraway, dill, anise, fennel, are all used for the distillation of this essential oil, and are much used as stimulants in different kinds of liniments, or employed internally as stimulants, carminatives, or aromatics.

Pereira gives the following list of the medicinal plants of the order, to which we have added some remarks:

1. *Umbelliferous carminative plants used in medicine.*

| NAME. | REMARKS. |
|--------------------|---|
| Caraway . . . | Much employed as a spice. |
| Anise, Fennel. | } Commonly used by the cow leech. |
| Angelica, Dill. | |
| | } Especially dill, used for wind in chil- dren. |
| Cumin . . . | Always put up in horse powders. |
| Carrot, coriander | { Used both as specifics and as a stimulant and carminative. |
| Fœnugreek. | |
| | { This is an error, as the plant is one of the Leguminosæ. |

2. *Umbelliferous roots used in medicine.*

Angelica carrot . . Mostly boiled or scraped for poultices.

3. *Umbelliferous fetid gum resins.*

| | |
|--|---|
| Assafoetida, Segapenum, Galbanum, Ammoniacum. | } Employed in the shape of pills or tinctures in various ailments, formerly more than at present. |
| | |

4. *Narcotic Umbelliferæ.*

Hemlock, conium* Much employed in medicine.

Besides these, many are employed in rustic medicine ; but, as a rule, we look upon it that the order is much too active to render it safe for ignorant people to play with, though it must be confessed that hemlock, gout-weed, and the like, are usually employed by old women in the shape of poultices for gout.

The aromatic seeds belonging to this order are much used by the cow leech, and the carter in combining his “drinks” —drenches for cows and horses ; but the stuff sold by the

* See Pareira's ‘Materia Medica,’ vol. ii, part 2.

country chemist for these consist of anything but the real material. The powders of these seeds are usually obtained ready prepared from the wholesale houses, and we may guess what is given to our agricultural horses by the following from Rennie's 'Supplement to the Pharmacopœia':

"PULVIS ANISI, Anise powder, when genuine, is made by pulverising the seeds, and adding a few drops of oil of anise to improve the flavour by supplying the volatile principle which is drawn off by the trituration.

"*Adulteration*.—With guaiac, linseed, fennel seeds, turmeric, Dutch pink, ivory black, stone blue, sago, barley-meal, rape oil, &c., which can only be detected by the experienced eye.* Of the same kind are all the seed and other vegetable powders sold for the same purpose. Fœnugreek-seed powder, though belonging to another order, is a constant ingredient in drinks for yellows, and this is how it is made:

"PULVIS FŒNUGRÆCI, Fœnugreek powder, the seeds of the *Trigonella fœnum-græcum* reduced to powder, and used in making emollient cataplasms, &c.

"*Adulterated* with pease flour, bean flour, turmeric, boxwood, sawdust, and powdered chalk or whiting."†

We have adverted to this subject before, and happy would it be for the owner of horses if his groom or carter mixed no other dirt with the nostrums; but when they mix pure antimony, arsenic, or vitriol, in dangerous quantities, there is no wonder we so often hear of valuable horses being poisoned by ignorant grooms or stupid carters.

Professor Tuson, in his 'Veterinary Pharmacopœia,' gives no less than seven active drugs prepared from the order, as follows:

Anisi fructus : aniseed.

Assafœtida : gum and enema.

Carui fructus : caraway seeds.

Coriandri fructus : coriander seeds.

Galbanum : gum.

Anisi oleum : oil of anise.

Coni tinctura : tincture of hemlock.

These are all more or less narcotic, stimulant, and antispasmodic. This is a small proportion compared with what is, or rather was, in use among our rustics.

We must now content ourself with having pointed out the nature and origin of some of our more important roots and vegetables. There is, however, reason to think that many forms not now brought into cultivation would well repay

* 'Rennie,' 1829, p. 356.

† 'Rennie,' p. 360.

the experimenter, and the ease with which carrots, parsnips, celery, and others, can be changed from weeds to esculent vegetables shows us distinctly that even the vegetables in most common use are derivatives from wild species; and though it is considered pious to consider that all plants in Paradise were made for man's direct use, and that by sin only were they degenerated into weeds, we yet conclude that it has been by virtue of thought and judicious experiment that we have formed vegetables out of weeds, and that by the same means the esculent list may be greatly augmented.

CASE OF RABIES

ADMITTED INTO THE COLLEGE INFIRMARY.

SINCE our last issue this malady is reported to have shown itself in two other packs of hounds besides the Royal buckhounds, and that hunting had in these instances necessarily been suspended and many of the dogs killed. During the interval, also, an instructive case of the disease has been admitted into the College infirmary, a few particulars relating to which we give.

Late in the afternoon of Saturday, December 7th, a black retriever, fifteen months old, was brought to the Institution by his owner, in consequence, as he said, of the dog having dislocated his lower jaw, *this being pendulous*. On the way to the College he had been very troublesome to lead, and required the correction of a small whip to keep him quiet.

On arrival a mere glance at the animal sufficed to show what was the real nature of the case, and he was at once placed in a cage specially constructed for dogs affected with rabies. We now learned that *as far back as February*, when he was only three months old, he had been bitten in one of the hind legs by a strange dog, and that, although he went lame for a few days, the wound was so small as not to require any particular attention. From that time until about a week prior to his admission he appeared to be perfectly well, and was allowed his usual amount of liberty both in the house and yard. He now became restless and excited, and on being tied up snapped at his chain, and showed a great disposition to set himself at liberty, and also to jump at persons who went near him. During the whole of Friday night, December 6th, he howled and barked a good deal, refused all kinds of food, and was much more excited and

quarrelsome than before. On Saturday his lower jaw was found to be pendulous, and on his owner unchaining him he immediately rushed towards the house and jumped through one of the windows into a room in which a lady and other persons were assembled. He sprung upon them and tried to lick their faces and hands, seemingly more as an act of recognition than of a desire to bite, which fortunately the paralysed state of his jaw did not allow of his doing, and fortunately, also, the flow of saliva just then was very limited. After a time he became more quiet, and crouched under the table, which at other times he was not accustomed to do.

During the whole of Saturday night, after his admission, and onwards to Tuesday, he was almost continuously barking and jumping at the bars of his cage, in his vain attempts to obtain his liberty. This was more especially the case when any person went near the cage to look at him. On Tuesday his strength greatly failed, and he soon ceased to bark, became unconscious, was unable to rise, and died early on Wednesday morning.

The case is interesting in several particulars, especially in the long incubation of the virus and the long duration of the disease after the declaration of the symptoms,—death not occurring until the eleventh or twelfth day.

The semi-ferocious state of the animal, in association with a paralysed condition of the lower jaw, is also an unusual feature, as nearly all rabid dogs thus affected are more or less docile, indeed often in a state of stupor, being the subjects of that form of the disease which has been designated dumb-madness.

THE PREVENTION OF PARTURIENT APOPLEXY.

By A. PRUDAMES, M.R.C.V.S., Berkhamstead.

KNOWING that many members of our profession are strongly opposed to venæsection I venture to add a few confirmatory remarks on the practical observations made by Mr. Santy in your December number on the above subject.

Having for nearly twenty years past adopted the practice of bleeding, viz. taking away from four to five quarts of blood within a week or so of parturition, and giving a saline purgative whenever I had reason to fear an attack, the disease would occur, to wit, in aged cows, being good milkers and in a plethoric condition, particularly during the spring and autumn, I can speak favorably of the results. Both

Alderneys and shorthorns are very liable to this disease, especially in certain localities, and in no case where this plan has been fairly carried out have I known true parturient apoplexy to follow, even among them. In one instance the result was so marked that I think it worthy of record. A well-bred shorthorn cow, the property of a farmer in this neighbourhood, was reported to have "dropped" (the local name for the disease), and on my visiting her I found the case to be one of true parturient apoplexy. Fortunately the usual means of treating the malady proved successful, and I afterwards advised the owner not to calve her again, but, being a good milker and a great favourite, he preferred running the risk, and wished me to adopt preventive measures. I therefore adopted the before-mentioned treatment, and with perfectly satisfactory results.

The following year, the owner seeing she was not in a high condition when due to calve, did not think it necessary to be at any trouble with her, but to his great surprise she again "dropped." On attending her this time I found her far worse than before, and feared the case would prove fatal; she had lost all power of deglutition, and was quite comatose, blind, and deaf. All medicine was given by the stomach-pump—a point which I attach much importance to, especially in extreme cases. My endeavours were again crowned with success. After her recovery she was again milked in a reasonable time, and ultimately fattened.

The only objection to these preventive measures that I have observed are that occasionally parturition is hastened, and sometimes the quantity of milk also for the first few days is lessened.

[We hope this subject will be taken up by several of our correspondents. Its importance demands that right conclusions should be arrived at, which can only be through the united experience of many veterinary surgeons engaged in cattle practice. At present we withhold our own, merely observing that for many years in succession, and in localities in which parturient apoplexy was exceedingly prevalent, preventives of the kind alluded to, including all others which our knowledge of the malady could devise, were had recourse to, but undoubtedly with less favorable results than we could desire.—EDS.]

PIG TYPHOID.

By J. ARNOLD, M.R.C.V.S., Thrapston.

I WAS pleased to observe your remarks on pig typhoid in the editorial of last month's *Veterinarian*.

Our market for the last four or five years has been a perfect hotbed of pig typhoid fever in its most virulent and destructive form.

I have on several occasions known a litter of pigs exhibited and sold in the market whilst suffering severely from the disease, and in the course of a few days every one of them had died; little or no notice being taken of the matter. Two or three cases have, however, been the subject of County Court actions, but in each of them the plaintiff has failed, not being able to prove guilty knowledge on the part of the vendor at the time of sale.

I am fully assured that pig typhoid, at least in this neighbourhood, is a far more serious ailment than it is generally thought to be, and hence these facts may not be unworthy of notice.

CASE OF NAVICULAR DISEASE OF BOTH THE FORE AND HIND FEET.

Communicated by F. BLAKEWAY, M.R.C.V.S., Stourbridge.

A GREY gelding, and a capital hunter, the property of a gentleman in this neighbourhood, became lame in the near fore foot after the hunting season of 1859. The lameness was believed to be due to navicular disease. The operation of neurotomy was ultimately had recourse to. The horse subsequently did his work as well as ever, and was ridden to hounds regularly till the end of the year 1861, when he went lame of the off fore foot. From this date he also showed very peculiar action behind, and was at times lame of both hind limbs without any apparent cause.

In the year 1862, from the groom's indiscreet use of physic, superpurgation was brought on, which caused the animal's death. On a *post-mortem* examination being made the horse was found to have *navicular disease in all four feet*. It is worthy of note that this horse had always "extravagant" action behind, but was a remarkably quick and good jumper.

[Our thanks are due to Mr. Blakeway for affording us the opportunity of examining two of the navicular bones—one *belonging to the fore, the other to the hind limb*—of the animal to which the above communication refers. In each of these, caries had taken place to a considerable extent, and the diffused inflammatory action, necessarily accompanying this condition of the bones, had, in one of them especially, led to ossification of the ligaments. The remote cause of the inflammation of the bone tissue which resulted in caries must, we think, be regarded as constitutional, but whether hereditary or not we have not sufficient evidence to determine. Doubtless in many instances, hereditary predisposition or constitutional diathesis plays an important part in the production of disease of bone tissue, as of other structures of the body, and as such will account in part for the great prevalence of splints, spavins, and allied osseous deposits, which we daily meet with in the examination of horses. Notwithstanding these causes and the application of others, which are the immediate or exciting ones in the production of navicular disease, the existence of the affection in all four feet at the same time is exceedingly rare, and we are glad to be enabled to place such a case on record.—EDS.]

“ EVIDENCE IN HORSE CASES.”

To the Editors of the ‘Veterinarian.’

GENTLEMEN,

The attention of my client, Mr. T. A. Dollar, has been called to statements appearing in the December number of the *Veterinarian*, page 794, relative to the case of Harris v. Jacobson, under the heading “Evidence in Horse Cases.” The statements are both erroneous and unjustifiable, and are calculated to do great injury to the professional status of my client.

The clause of which Mr. Dollar complains especially is as follows:—“On his” (*i. e.* the plaintiff’s) “behalf was called “Mr. T. A. Dollar, of New Bond Street, who described “himself as veterinary surgeon to the Prince of Wales, but “afterwards admitted that he was not a member of any “college.”

Mr. Dollar did not describe himself as “veterinary

“surgeon to the Prince of Wales,” but stated, as the fact was, that he had been employed by his Royal Highness for sixteen years. Mr. Dollar did not represent himself to be a member of any college, but stated that he had obtained his certificate, enabling him to practise as a veterinary surgeon, from the Highland and Agricultural Society of Scotland in 1851 ; that for seventeen years he had been an examiner on the Veterinary Board of that Society, and for the last ten years had been President of the Practical Section of that Board, and had practised with success as a veterinary surgeon in London for the last twenty-five years.

These statements appearing in the *Veterinarian* are so worded as to affect Mr. Dollar most injuriously in his profession and in the opinion of those who are not aware of his qualification.

On behalf of my client I must request you to insert this letter in a conspicuous part of your next number, accompanied by a retraction of, and an apology for, the unfounded and libellous statements to which your report in the *Veterinarian* has given publicity.

I have the honour to remain,

Gentlemen,

Your obedient servant,

26, Charles Street,

LOVEL KEAYS.

St. James's Square ;

10th December, 1878.

[We very willingly insert the above letter, although we fail to see anything either libellous or untrue in the words to which it refers. Mr. Dollar is well known as a respectable veterinary practitioner, and in admitting the article from a correspondent we had no intention of doing him any dishonour. According to the Charter granted to the Royal College of Veterinary Surgeons no one is entitled to call himself a veterinary surgeon unless he has undergone an examination by that body and holds a diploma, which Mr. Dollar does not. Nevertheless, we did not insert the letter to give prominence to this fact, but to draw attention to remarkable differences of opinion existing among professional witnesses.—EDS.]

“ PROFESSIONAL UNITY.”

GENTLEMEN,

We have recently heard much of “ professional unity,” and of the happy future when veterinarians will pull amicably together under one corporate body, which is to infuse courtesy and general good will. Only lately an editorial appeared in the *Veterinary Journal* setting forth the benefits which are to arise from the Highland and Agricultural Society suspending their veterinary examinations. With one portal to the profession, the editor hopefully anticipates that there will henceforward be “ no divided professional interests—no occasion for party jealousy or ill-feeling.” But whilst thus enjoining brotherly amity and approving of the admission into our ranks of the graduates of the Highland and Agricultural Society a “ horse case,” *Harris v. Jacobson*, is reported in your last number in such a manner that any one reading it, being a stranger to the profession, could only conclude that Mr. T. A. Dollar, therein referred to, was in no way connected with the veterinary profession. I am fully aware that Mr. Dollar does not possess the diploma of the Royal College of Veterinary Surgeons, and holds simply the certificate of the Highland and Agricultural Society of Scotland; but to speak of so active and useful a professional brother in the manner it is inserted in the *Veterinarian* would stigmatise him as an empiric.

No testimony of mine can add to Mr. Dollar’s high professional capabilities and zeal in advancing the interests of his profession.

I have written for further information regarding this case, which seems to me to indicate in our ranks something worse than “ difference of opinion,” a title under which it has appeared, and purpose bringing it under the notice of our Veterinary Medical Association as a sad illustration of the need of “ professional unity,” and, I might add, professional courtesy.

Yours, very truly,

THOMAS TAYLOR, F.R.C.V.S.

To the Editors of the ‘ Veterinarian.’

Pathological Contributions.

CATTLE PLAGUE.

FROM information received from St. Petersburg in the beginning of this month, cattle plague still exists in the following Governments bordering on Austria and Germany, and in those adjoining the Black and Baltic Seas, namely, in Bessarabia, Warsaw, Volhynia, Ekaterinoshav, Podolia, St. Petersburg, and Kherson.

In Turkey, cattle plague is stated to be still existing in the district of Jassy.

Cattle plague has once more appeared in the German Empire. Telegraphic information, dated 30th November, reported that the disease had broken out at Stallupöhnen, in the Government of Gumbinnen, in a farm yard occupied by fifty-three head of cattle.

The introduction of the plague has been found to be owing to cattle smuggled from Russia.

Later information is to the effect that the disease has appeared in other places, in the districts of Potsdam, Frankfort-on-the-Oder, in the circles of Lebus, Goldin, West Sternberg, Königsburg, &c.

The precautions and extirpatory measures authorised by law have been enforced in the infected and threatened districts. Cattle attacked, as well as those suspected, have either been slaughtered or isolated.

The larger cattle markets threatened, namely, Berlin, Breslau, Leipzig, and Hamburg-Altona, have also been closed for the present.

The disease is now stated to be widely spreading, and it has been officially announced that the plague has broken out in twenty-four places in the Government district of Frankfort-on-the-Oder, and in three places in that of Potsdam.

The number of animals that have been attacked and have died since the first appearance of the plague at Stallupöhnen up to the 10th of December, as well as of those that have been slaughtered as suspected, amounts in the district of Gumbinnen to 103 head of cattle; in the district of Frankfort-on-the-Oder to 416 head of cattle, 254 sheep, and 11 goats; and in the district of Potsdam to 53 head of cattle and 3 sheep.

PLEURO-PNEUMONIA.

THE last report of the progress of pleuro-pneumonia in the Netherlands indicates a considerable decline in the number of cases. During the month of November there were nineteen animals attacked in the districts of Guelderland and North and South Holland.

In those parts of the country from which the malady has been extirpated, it is proposed to adopt the extreme measure of slaughtering the whole herd where a case of pleuro-pneumonia is detected.

In this country the disease continues to prevail, and the provisions of the Act of 1878 and Orders of Council are being enforced stringently in some districts.

FOOT-AND-MOUTH DISEASE.

VERY few centres of infection are now known to exist in this kingdom, indeed, we do not recollect a time since the introduction of the affection when there were so few. Under the provisions of the Act of 1878 and the Orders of Council, the malady should practically be extinguished in a short period.

THE CONTAGIOUS DISEASES (ANIMALS) ACT, 1869.

RETURN of the Number of Foreign Animals brought by Sea to Ports in Great Britain, which on inspection on landing, within the month of November, 1878, have been found to be affected with any Contagious or Infectious Disease, specifying the Disease, and the Ports from which, and to which, such Animals were brought, and the mode in which such Animals have been disposed of:

Also, whether the Foreign Ports from which the Animals are brought are in Scheduled or Unscheduled Countries, and the Number of Healthy Animals brought in the same Vessels with the Diseased Animals, and the mode in which such Healthy Animals have been disposed of, whether by slaughter or otherwise :—

SCHEDULED COUNTRIES.

| | | | DISEASED ANIMALS. | | | | | HEALTHY ANIMALS.* | | | | | | | |
|--|--|----------------|-----------------------------|--------|--------|--------|--------|--|---------|--------|--------|--------|--------|--|------|
| | | | Number of Diseased Animals. | | | | | Number of Healthy Animals brought in the same Vessels with Diseased Animals. | | | | | | | |
| Ports in Scheduled Countries from which brought. | Ports in Great Britain to which brought. | Disease. | Cattle. | Sheep. | Goats. | Swine. | Total. | Disposal. | Cattle. | Sheep. | Goats. | Swine. | Total. | Disposal. | |
| Amsterdam | London | Foot-and-mouth | ... | 60 | ... | ... | 60 | { Slaughtered under the instructions of the Privy Council. Ditto Ditto Ditto Ditto | 121 | 14846 | ... | 92 | 15059 | { Slaughtered under the instructions of the Privy Council. Ditto Ditto Ditto Ditto | |
| " | " | Sheep-scab | ... | 2 | ... | ... | 2 | | ... | 248 | ... | ... | ... | | 248 |
| Bremen | " | " | ... | 15 | ... | ... | 15 | | ... | 125 | ... | ... | ... | | 125 |
| Hamburg | Hartlepool | Foot-and-mouth | ... | 3 | ... | ... | 3 | | ... | 1977 | ... | ... | 43 | | 2104 |
| Harlingen | London | " | ... | 24 | ... | ... | 24 | | 298 | 3588 | ... | ... | 133 | | 4019 |
| Rotterdam | " | " | ... | 26 | ... | ... | 26 | | | | | | | | |
| Total Diseased Animals. { | | | ... | 113 | ... | ... | 113 | Total Healthy Animals . | 503 | 20784 | ... | 268 | 21555 | | |
| Foot-and-mouth | | | ... | 17 | ... | ... | 17 | | | | | | | | |
| Sheep-scab | | | ... | | ... | ... | | | | | | | | | |
| Total | | | ... | 130 | ... | ... | 130 | | | | | | | | |

* 'Healthy Animals' means Animals which were not found to be diseased on inspection on landing.

UNSCHEDULED COUNTRIES.

No case of contagious or infectious disease has been detected in animals brought to this Country from Unscheduled Countries during the Month of November, 1878.

Veterinary Department, Privy Council Office,
December 9th, 1878.

Facts and Observations.

THE USE OF DIGITALIS.—Recently a discussion took place at the Paris Société de Thérapeutique, on the therapeutic influence and mode of administration of digitalis in disease. Most of the speakers gave the preference to a cold infusion of the leaves over any other preparation, and were almost unanimous in condemning digitalin as being dangerous and unreliable, as it does not possess the diuretic properties contained in the leaves. Dr. Hérand, who brought the subject to notice recommends the following preparation:—Macerate for twelve hours twenty-five centigrammes of the powdered leaves of digitalis to two hundred grammes of cold water. This is then strained and the patient is directed to take it in five or six doses, in the twenty-four hours, at some distance from meals. This dose, he said, should never be exceeded if we wish to avoid its poisonous effects; and the quantity he prescribes is quite sufficient to produce the full therapeutic action of the drug, beyond which it is needless to push it. Dr. Hérand considers digitalis one of the best diuretics known in affections of the heart; whereas it is useless when there is no cardiac lesion, as for instance, in cirrhosis, albuminuria, &c.—*Medical and Surgical Reporter.*

THE DETECTION OF PRUSSIC ACID.—A very simple method of showing that there is no free hydrocyanic acid in the kernels of peach, cherry, and plum stones, or bitter almonds, but that it is formed on heating the same with water, is given in the *Polytechnisches Notizblatt*. A long strip of Swedish filter paper is soaked in the tincture of gum guaiacum (1 to 20) and dried. It is next passed through a solution of sulphate of copper diluted 2000 times, when this paper will not be changed at all in colour. Freshly-pounded bitter almonds are put in a two-litre flask with water. On suspending in it the strip of test-paper above described, the paper will remain white, but on pouring into the flask a single crushed bitter almond that has been *warmed* with water, the test paper will at once be coloured blue by the hydrocyanic acid generated in the flask, without bringing the paper in contact with the liquid.—*The Chemist and Druggist.*

THE VETERINARIAN, JANUARY 1, 1879.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

THE PROPOSED INTRODUCTION OF FOREIGN ANIMALS AT THE INTERNATIONAL EXHIBITION OF THE ROYAL AGRICULTURAL SOCIETY.

It has been understood for some time past by the promoters of the International Exhibition, which is to be held next year under the auspices of the Royal Agricultural Society, that selected specimens of foreign animals should, if nothing occurred to prevent it, form a feature of the show. With this object the Council of the Society applied to the Privy Council to ascertain, as far as possible, what conditions would be imposed on the animals which the foreign exhibitors might choose to send to us. In response to the application the Lord President of the Privy Council attended as a member of the Council of the Society at the meeting on Wednesday, December 11th, and made some remarks on the action which had been taken by the Society. In the course of his observations his Grace said "that when he received a copy of the proposed prize list he was struck with the inconsistency of his colleagues on the Council and in the Shorthorn Society in issuing a prize sheet in which was included a list of prizes for a number of animals that were invited to come from foreign countries. Without wishing to say anything personal to his colleagues, he thought they would all bear him out when he said that since he had the honour of being Lord President of the Council they had continually requested him to legislate for the prohibition of the importation of foreign animals. The views entertained by the Royal Agricultural Society and by the Shorthorn Society were these:—That to get rid of those diseases which, as they stated—and he thought perfectly rightly and justly—had affected so prejudicially their interests in this country, it would be necessary to pass a law enacting that all foreign animals should be slaughtered upon the other side of the

water. Of course it became his duty to look into the matter very closely, and he found it was impracticable to carry out those views ; and he therefore endeavoured to find a mode of solving this difficulty, and accordingly he brought in what he thought a good measure, but which, at the same time, was a very stringent one. It dealt with foreign animals in a very active manner. The measure, however, did not pass through both Houses of Parliament ; it did pass eventually in a modified form, but still in a form which he believed would be extremely advantageous in the way of keeping down disease, and preventing it from appearing in this country. He was perfectly aware that, in consequence of the great kindness and hospitality which was shown in Paris to all their friends during the past year, it had been thought advisable to make some return to the foreigner for what he had done to us. If that could be done with safety he would be the first to agree to it ; but he did not think that in doing so they should run any risk of disease being introduced into England by admitting foreign animals with all the diseases which they could bring with them. That there was great danger in coming into contact with these animals those who took any active part in the Exhibition of Paris would, he was sure, be ready to admit. English animals went there free from disease, and came back with foot-and-mouth disease, so much so that he had to establish a quarantine station near London to receive them on their return ; and he was afraid that he had incurred the displeasure of some of his agricultural friends in the far north in consequence of their long detention in quarantine. Before consenting to admit foreign animals very stringent regulations would be imposed by the Privy Council. Of course the Royal Agricultural Society would know that when he passed orders for quarantine they would be solid and *bonâ fide*, and that he was bound to carry out, under the Contagious Diseases (Animals) Act, and by these Orders in Council, a real and *bonâ fide* quarantine. What he intended to do was to have such a quarantine as should, if possible, prevent us getting any foot-and-mouth disease into the showyard at Kilburn. By some means or other, whether by the regulations which have been in operation, or by the

more thorough inspection of trucks and railway stations, there has not been for some years so little foot-and-mouth disease in the country as there is at present; and therefore he should be extremely sorry if, by a too lavish hospitality to foreigners, we should bring over those diseases which foreign cattle were somewhat prone to. He would beg and urge upon the Council that before the prize sheet was issued to the foreigner there should be a clear notice as to what he would undertake by entering his animals to be shown at Kilburn; and that it was possible that, though he might enter his animals within the time specified, circumstances might arise before the Exhibition took place which would entirely prevent his animals from coming to this side of the water. He understood that the Society were going to provide a quarantine station, but he apprehended that would be done under the Orders in Council, and that some quarantine station might be provided nearer to London than Southampton. In any Orders in Council issued in accordance with the Act he should only make such regulations as he deemed necessary to prevent the introduction of diseases into the country."

It is not necessary for us to add anything to the remarks of the Lord President, but we may echo the advice that the foreign exhibitor should be made aware that animals from various parts of Europe cannot be admitted without undergoing a period of quarantine, the duration of which cannot be defined until all the circumstances are known, and they cannot be known until the time has arrived for the shipment of the animals. As the Duke of Richmond and Gordon said, a country which is free to-day may be prohibited to-morrow, and our wish to reciprocate the courteous treatment which our English exhibitors met with in Paris is not likely to be so paramount as to obscure our view of the risk which will be incurred unless proper precautions are taken. The prize sheet is not yet issued, and probably the greater number of the English exhibitors at the forthcoming show are unaware of the intention of the Society to admit foreign animals; they will naturally expect that foreign stock shall be so dealt with that their valuable home-bred cattle and

sheep shall not be exposed to unusual risk. From every point of view, therefore, there is reason for insisting on the establishment of precautionary measures, which shall be as severe as circumstances may render necessary.

Extracts from British and Foreign Journals.

OUTBREAK OF TYPHOID FEVER FROM INFECTED MILK.

We have been favoured with the following authentic particulars respecting the outbreak of typhoid fever at Huncoat, near Burnley:—A small farmer at Huncoat, near Burnley, Lancashire, named Jonathan Clegg, has three children suffering from typhoid fever. It appears that the children ill of fever have had no regular nurse, but have been attended first by one member of the family and then another. The father, for instance, would nurse his sick children, and then, without taking any precaution, would go and attend to his cattle, and it is supposed that during the process of milking the cows and manipulating the milk and butter, germs of the fever have been introduced into the milk. Clegg sells part of his milk, and amongst his customers there are twelve cases of typhoid fever; the connection between typhoid fever at the farm and these cases being made the more clear from the fact that there are no cases of fever except where Clegg's milk is used. No information of the fever cases at the farm was given to the sanitary authority. The connection of the fever with the farm milk was only discovered in tracing the outbreak. Dr. Dean, the medical officer of health for the rural sanitary authority of Burnley, took prompt measures to sever all communication between the fever patients and the milk. All the cases except that of a young woman, a domestic servant, are amongst children, and the type of the fever is mild; no deaths have yet occurred. It may, however, be remarked that most of the cases are only just commencing. Clegg has fourteen head of cattle, and with the exception of one man servant, all the work of the farm, including selling the milk and butter, is done by himself and family.—*The Sanitary Record*.

HORSE-SICKNESS IN SOUTH AFRICA.

Our thanks are due to Mr. Wiltshire for furnishing us with the following copy of his Official Report on "Horse Sickness in South Africa."

ORDER.

His Excellency the Lieutenant Governor directs that the following Report by the Veterinary Surgeon for the Colony, on the subject of the disease called "Horse Sickness," be published for general information.

By His Excellency's command,

C. B. H. MITCHELL,

Colonial Secretary.

Colonial Secretary's Office, Natal,

June 20th, 1878.

THE HON. THE COLONIAL SECRETARY,

Sir,—I have the honour to forward for the information of His Excellency, the Lieutenant Governor, a Report on the disease known as horse-sickness, in which I have endeavoured to show, as well as the limited opportunities I have had of observing the disease enable me, the true nature of this affection, and the best means of treatment and prevention, and also the probable cause of it.

It is an enzootic affection, supposed to be peculiar to South Africa, but I am informed that a disease very similar to it in its symptoms and the rapidity with which it kills, affects horses in a district of India called Loodiana, and that it is there attributed to a particular kind of grass. I am endeavouring to obtain the fullest information on the subject, so as to compare notes of the two diseases to see if they are identical, but especially with reference to the causes assigned for each.

Horse-sickness is a malignant disease, usually exceedingly rapid in its course, and terminating fatally in a few hours, but sometimes extending over two or three days. Occasionally an animal recovers, it is however subject to a second and even a third attack, either of which may cause its death.

This affection is not peculiar to the horse, as it also attacks the mule, quagga, &c. A gentleman also informed me that he had shot wildebeestes seen to be suffering from sickness in which the lungs were found to present the same appearance as those of a horse which has died from horse-sickness.

It occurs in summer, and all danger is supposed to be over when hoar-frost appears. I have heard, however, that cases

occasionally happen in the winter at the coast, generally when there is no more rain than usual, and this year after a summer remarkably free from it, it commenced in that district about the middle of April and extended into the third week in May, a period unusually late for it.

This disease manifests itself in different forms, viz. the dikkop, black-tongue, and throat-sickness, characterised by external tumours, besides the most common form without any local swellings; all, however, are identical, I believe, in the condition of the blood, and in the lungs and intestines being more or less affected.

In whatever form it appears it often begins very suddenly, either during or after exercise; at other times the horse is dull and does not feed well for some days before any urgent symptoms appear, except perhaps slight colicky pains; if, however, a clinical thermometer is used, the temperature is found to have risen to 102° or upwards. As a rule, the first thing noticed is the accelerated breathing and other symptoms indicative of inflammation of the lungs, such as redness of the mucous membranes of the eyes, swelling over the eyes, quick pulse, cough, coldness of the extremities, scanty urine, &c.

On listening to the lungs, the sounds vary according to the progress the disease has made; in some instances they are not much altered, while in others there is an entire absence of sound, except in the large tubes, which are found filled with yellow frothy mucus giving rise to a bubbling sound at every inspiration and expiration. In some instances this mucus is discharged in immense quantities from the nostrils at each expiration, in others there is no discharge. The whole of these symptoms are not always present nor of the same severity, scarcely two cases being exactly alike; the temperature, however, is always high, usually from 105° to 108° Fahrenheit.

In the varieties termed Dikkop, Black-tongue, and Throat-sickness, the head and other parts indicated by these terms, swell up to a considerable size and interfere with the breathing.

Post-mortem Appearances.

If the horse has been dead a few hours the body is found to be distended with foetid gas, and there is generally a quantity of frothy mucus round the nostrils.

Abdomen.—On cutting into the abdomen dark lines and patches are noticed on the intestines; the mesenteric glands are tumefied and very dark in colour; liver and kidneys gorged with blood; spleen dark in colour and sometimes enlarged;

the blood is dark in colour and coagulates imperfectly. On examining it with a microscope, in all cases where I have been enabled to do so, I have invariably found Bacteria present.

Chest.—This cavity often contains a quantity of straw-coloured fluid on both sides; the lungs are found to be intensely gorged and very heavy, and along the edges and in patches a large quantity of yellow lymph is deposited beneath the pleural covering; on cutting into them blood and serum flows freely from the cut surfaces as well as yellow frothy mucus from the tubes; the interlobular space is filled with fluid. The pericardium contains a quantity of straw-coloured fluid also; the heart I have sometimes found soft and flabby, and it usually contains small clots remarkably soft; in the left side there are invariably black patches (ecchymosis) beneath the lining membrane, more or less extensive.

In the form termed Throat-sickness there is great swelling of the throat between the lower jaws, involving the larynx, &c. I have not seen this form myself, but I am told that upon cutting into it the parts are very black.

In those cases where the lungs are only lightly affected, and there are no external swellings, death appears to result from the intensity of the fever.

Contagion and Infection.

This disease is not considered contagious nor infectious.

Whether it can be produced by inoculation I have not yet been able to determine.

Incubation.

The period of incubation is not known. I have no doubt that it is often very short, but there is reason to believe that in some instances it is in the system for some time before showing any outward symptoms, only waiting for conditions favorable for its development.

Causes.

The causes giving rise to this disease are very obscure; the opinion of the Dutch and that of the Colonists generally is, that it is due to miasma, and that it is contained in the dew, so that if a horse is not turned out to graze till the dew is off the grass, and brought in before it falls in the evenings, he is safe. This practice is very good, but as a matter of fact, it does not prevent the disease, besides which many die from horse-sickness that are stabled and not allowed to graze, but fed on grass cut for them.

On the other hand I can hear of no well-authenticated case of horse-sickness occurring in a horse fed exclusively on dry food—such as forage, mealies, &c.—no matter how bad the situation of the stable, nor how deadly the season for it. In all cases that have occurred in horses kept, as a rule, under these conditions—where I have been able to obtain reliable information—I have invariably found that they have either been allowed to graze on some occasion when out, or have had grass given to them in the stable; generally when they have been away from home or forage was not obtainable.

The places most favorable for it are valley and low lying lands, but it also occurs on land at an elevation of several thousand feet above the level of the sea.

In some of the most elevated districts of the Colony I understand that it has either never been known or only in exceptionably bad seasons.

Predisposing Causes.

Among the predisposing causes of this disease are change of climate, a plethoric condition from good feeding without sufficient exercise, and the proper regulation of the diet; a hot and moist atmosphere favours its development; it is depressing, the textures of the body are relaxed, the circulation is languid, and the skin as well as the lungs and other organs are less active in the performance of their several functions, so that respiration, digestion, and other vital phenomena, as well as the formative and eliminative processes, are impaired, and serious results follow.

The bad sanitary arrangements to which horses are subject in this country, as well as the sudden changes of temperature, and fatigue from severe or prolonged exertion, are also predisposing causes.

After carefully considering the matter, I am led to believe that miasma is not the cause of the disease, but that the poison is contained in the grass. In support of this I may state that as the late summer was an unusually dry one, the swamps and valleys became dry, instead of being saturated or covered with water as usual, consequently they were in a more favorable condition to throw off malarious exhalations than usual, the effect of which was seen in the increase of fever among human beings; and yet the season was remarkably free from horse-sickness until we had rain.

It seems to me, therefore, that heat and moisture are essential for the production or development of the agent which gives rise to this disease. What the precise nature of that agent is is still matter for investigation, but I think it is

probably due to parasite fungi investing the weeds and grasses in the same way as smut, rust, and other cryptogams affect forage and other grain.

Animals have been known to become affected with diseases allied to this after eating food on which cryptogamic plants were found, and colic often occurs after the ingestion of mouldy forage and other food affected with such parasitic plants, and colicky pains are often among the first visible symptoms of an attack of horse-sickness.

Nature.

A consideration of the conditions known to be most favourable for its development, the causes assigned, the symptoms observed during life, and also the *post-mortem* appearances, together with the constant presence of Bacteria in the blood,—in every case where I have had an opportunity of examining it—enable me to identify it as one of a group of septic diseases termed Anthrax.

Horse-sickness, then, is Anthrax fever, resulting from the action of a poisonous agent ingested with the food, causing grave changes in the blood, impairing its vitality, and inducing general morbid state of the system, with congestive inflammation of the lungs, and in some instances external tumours.

Treatment.

In the treatment of a disease so sudden in its development and fatal in its results, anything like a specific is out of the question, and it too often happens the remedial measures, however prompt and skilfully applied, fail to produce any benefit. It must be borne in mind that there are grave changes in the blood, as well as an engorgement of both lungs and other organs to contend with, and also a high degree of fever; the treatment, therefore, should be such as will counteract these several conditions.

In the majority of cases the symptoms are not noticed till the disease is too far advanced for treatment to be of any benefit; when, however, they are noticed in a comparative early stage, I would recommend the administration of 20 drops of tincture of aconite, to be followed as quickly as possible by a ball composed of—

| | |
|-------------------------------------|---------|
| Powdered digitalis . . . | 1 dram. |
| Tartar emetic . . . | 1 „ |
| Calomel . . . | 1 „ |
| Camphor . . . | 1 „ |
| Chlorate or nitrate of potass . . . | 2 „ |

with sufficient mass to make a moderate-sized ball ; this may be repeated in four hours, and about 10 or 15 drops of aconite may be administered every hour in the interval.

Instead of blistering the sides with euphorbia, as is too often done, it would be better to dip rugs or blankets in hot water and apply them to the chest, or if a counter-irritant be applied, let it be mustard, it will be as efficacious as the other, and less likely to be injurious. Clothing may be put on so as to induce perspiration, and so relieve the lungs and help to eliminate the poison ; and half an ounce of the chlorate or nitrate of potass put in water for the horse to drink.

Bleeding should not be had recourse to unless the breathing is very difficult ; in most cases that I have seen of this disease it has not been admissible, and it is often carried too far, so that if a horse does not die at once he is prostrated as to lessen the chances of his recovery later on.

When it is necessary to bleed, the amount to be taken should be in the proportion of about 1 lb. of blood to every 100 lbs. of the horse's weight, unless the pulse begins to falter, in which case it should be stopped at once.

In those cases in which the bowels are constipated, oil should be given in preference to more active agents. Horses should be placed in a comfortable loose box, if possible, but as the stables are generally bad, they would often be better under the shade of trees or buildings when it does not rain.

During the acute stages of the diseases horses are seldom inclined to eat, but whenever they will the diet should consist of bran or linseed mashes, roots, lucerne, sugar-cane, &c. If recovery takes place forage and other good food should be given as well in moderation, and this, with the best nursing that circumstances will admit of, and the administration of tonics along with the food will be essential.

In suggesting the above treatment, which—in my very limited experience of this disease—I have found most beneficial, I am not prepared to guarantee its efficacy in any case.

Since I have been enabled to determine the nature of this affection I have not had an opportunity of testing the value of other medicinal agents, but in the future I intend trying the effects of antiseptics, such as the sulphite or hyposulphite of soda, carbolic acid, &c.

Preventive Measures.

The most certain way of preventing horse-sickness, in my opinion, is to keep horses stabled, and feed them entirely on dry food, such as good forage, mealies, bran, &c. I consider it unsafe to give freshly-cut grass during the season for sickness. Of course, on farms where horses are bred, such a system is impracticable, and at present I can suggest no remedy; but these remarks apply to horses in daily use in the towns and coast districts particularly.

More attention should be paid to sanitary arrangements, the stables as a rule being too small, ill-made and ventilated, and, in many instances, reeking with filth; and yet pure air and cleanliness are as essential for the maintenance of health in horses as in mankind.

The diet should be carefully regulated so as to avoid the ill effects of bad feeding which are to be seen every day in disorders of the liver, colic, and other things too numerous to mention, all of which render horses more susceptible to disease.

In the detection of this and other diseases the uses of the clinical thermometer will be found most valuable, as it is an unerring guide in the earliest stages, when outward symptoms are not to be relied on, and it gives time to adopt treatment which in many cases is successful.

I regret that I am unable in this report to deal so exhaustively with this subject as its importance demands, but my experience of this disease has been limited, so that beyond determining the nature of it—of which I have no doubt—I do not feel in a position to speak with very great authority on it.

The investigation of a disease, the cause of which is so obscure, is very difficult; but I hope at some future time to acquire such valuable information as to its origin and the best mode of dealing with it, as I trust will prove of benefit to the colony.

I have the honour to be, sir,

Your obedient servant,

Pietermaritzburg,
18th June, 1878.

S. WILTSHIRE,
Vet. Surgeon for the Colony.



OVER-DRIVEN CATTLE.

M. Bouley recently read a paper before the Academy of Sciences, Paris, on the ill-effects of over-driving cattle. He said that anatomists have long since remarked in animals which have been exposed to severe exertion a tendency to putrefaction in the muscles. The fact is certain that game which has been the object of long pursuit cannot be kept for any length of time. Hares which have been chased by greyhounds ought to be eaten the same day. Whether stags which have been hunted and driven to bay can be preserved is very doubtful. But that part of the question is not of very vital importance, as the purchaser can always assure himself of the freshness of meat offered on the market, and, moreover, a thorough cooking is a sufficient guarantee against any ill effects to be apprehended from flesh more or less perfectly fresh.

As to the quality of butchers' meat taken from animals fatigued by long driving or continuous standing in railway trucks, all veterinary surgeons affirm that it is much inferior to that of beasts killed while in a state of repose. The result of that evidence is that the sheep and calves driven to the slaughter-house, frequently in the most barbarous manner, produce meat far inferior to what they ought to do. M. Bouley insisted upon the necessity of the Academy making a representation to the Government of the advisability of having a much more effectual inspection at the markets before the meat is allowed to be sold.

Dr. Delpech stated that he had turned his attention to the subject for years and he was fully aware that graziers were in the habit of slaughtering their animals the moment the latter showed any symptoms of disease, and sending the carcasses off to market. He added that the matter had long been under the consideration of the Ministry of Agriculture and Commerce, and that a Bill would shortly be laid before the Chambers to appoint qualified inspectors at the points of departure and arrival, so as to ensure the absolute wholesomeness of the food offered for sale. In the meantime he earnestly entreated housekeepers to remember that the only preservative from dangers arising from the unsatisfactory state of the meat was in cooking it thoroughly.—*Live Stock Journal*.

“IS LIFE TO BE EXPLAINED BY MODERN CHEMICO-
PHYSICAL THEORIES?”

WE have much pleasure in giving insertion to the following paper from the pen of a member of our profession, Mr. W. H. Kennedy.

WREXHAM SOCIETY OF NATURAL SCIENCE.

On Tuesday, November 12th, the second general evening meeting of this session was held in the Savings Bank, Dr. Williams presiding. There was a very good attendance. The Rev. G. Williams, Gwersyllt, and the Rev. J. Lewis, Gresford, were elected members.

Mr. W. Hastie Kennedy, Hope Street, read the first portion of an interesting paper, based on the question, “*Is life to be explained by modern chemico-physical theories?*”

After some preliminary remarks, Mr. Kennedy said that modern philosophy would have us believe and accept as true that the organic and inorganic were one, that that which possessed life was to be regarded as in no way different from that which possessed no life. A living organism, they said, was simply nothing more than a collocation of inorganic dead molecules, acted upon by the ordinary chemical and physical forces of the Universe. Molecular activities, inorganic molecular actions and interactions, says modern philosophy, these are fully competent, and all that is required to bring about life.

He proposed to show, in opposition to these theories, that we had an organic and an inorganic series, and that these two series were not one and the same, that we had a living series and a dead series, and that these two were likewise not one and the same. Further, he would show that we had a living substance in nature, and that this substance possessed living characteristics, and he would ask whether these living characteristics were referable to chemico-physical theories, or to some determining agency or power of a much superior and distinct kind, and which was quite apart from those ordinary forces which ruled alone, and only ungoverned amongst simple inorganic dead matter.

The lecturer then pointed out the differences between the organic and inorganic, in general configuration, in chemical composition, in intimate structure, in mode of increase, and in cyclical change of state; showing also that the living and

the dead were separate and distinct. Having established this much, the lecturer then showed that there was not a living thing which did not contain the simple element of life. Protoplasm and the protoplasmic spherule or germ from which ultimately the simple sponge was evolved, differed in no way at present perceptible to the senses from that which constituted the germ of man. He then entered fully into the characteristics and properties of protoplasm, and the manner in which the organism and structure of life was built up from it, and then asked whether, when they knew and could realise that men and animals and all their organs and structures resulted entirely from a series of changes seen to commence in simple portions of matter, too minute to be weighed, could they still refer such results to the modern tendencies of thought? He believed they would not, but that they must see that unintelligent matter and unintelligent force could not by any possibility create and bring about such marvels.

What, he would ask, gave to man a capacity to investigate the laws of matter and mould it to his will? What produced the discursive power of fancy, the corrective principle of reason, the ruling and judging power of understanding, the impulsive power of will, and that wonderful capacity of discernment? What called forth consciousness? Modern philosophy answered "Matter and force." But how could blind unintelligent matter impart a property it never possessed? Whence could reason or intelligence proceed without the pre-existence of intelligence to impart it? Chemical and physical force can do much, but in themselves cannot create life. No, they must look upward to Him, "in whom we live and move and have our being."

The lecture was frequently applauded, and at the close the Chairman expressed the pleasure he had enjoyed, feeling sure he might say the same on behalf of the audience; all present would look forward with interest to the second lecture to be given that day fortnight.—After some remarks from Mr. Johnson and Dr. Eyton-Jones, the proceedings closed.—*Wrexham Advertiser.*

INTRAVENOUS INJECTION OF MILK AS A SUBSTITUTE FOR TRANSFUSION OF BLOOD.

DR. T. GAILLARD THOMAS (*New York Hospital Gazette*) read a paper on this subject before the New York Academy of Medicine. The operation was first performed by Dr. Hodder, of Toronto, about 1850, who employed it three times in the treatment of collapse in Asiatic cholera. Next, Dr. J. W. Howe, of New York, injected six ounces of goat's milk into the cephalic vein in a case of phthisis, but with no benefit to the patient. Dr. Howe also injected cow's milk into the veins of five dogs, and they all died. The experiments of Dr. Eugene Dupuy, made at the suggestion of Dr. Thomas, proved that milk could be injected without any baneful results. In these experiments it was found, that cases of intravenous injections of milk, which had been removed from the cow for an hour or two, invariably proved fatal, while the injection of perfectly fresh milk was followed by marked benefit. The method employed by Dr. Thomas may be best illustrated by relating briefly one of his cases. A healthy cow was driven into the yard of the hospital, and eight and a half ounces of milk drawn from her udder into a porcelain dish, surrounded with warm water, were permitted to flow slowly into the median basilic vein of the patient from a glass funnel, to which was attached an india-rubber tube and a suitable nozzle, to be introduced into the opening in the blood-vessel. A rigor followed the operation; the temperature rose to 104° F., but these symptoms soon passed off, and the patient, who was moribund at the time of the operation, rallied, and left the hospital in about three weeks. Dr. Thomas has employed it in seven injections, and arrives at the following conclusions:—1. Injection of milk into the circulation in place of blood is a perfectly feasible, safe, and legitimate operation. 2. None but healthy milk drawn from the udder of the cow, within a few minutes of its introduction into the circulation, should be employed. It should be tested with litmus paper, and, if found to be acid, should be made alkaline by the addition of carbonate of soda. 3. A glass funnel, with an india-rubber tube and a suitable pipe attached, was much better and safer than a more elaborate apparatus. 4. Intravenous injection of milk was an infinitely easier operation to perform than transfusion of blood. 5. Intravenous injection of milk, like that of blood, was commonly followed by a chill and

rapid rise in temperature; but these symptoms soon subsided, and were replaced by a great improvement in the general condition of the patient. 6. He would not limit lacteal injection to cases in which profuse and exhausting hæmorrhage had occurred, but recommended their use in certain cases of typhoid fever, pneumonia, cholera, &c.—*British Medical Journal*.

FOWLER'S SOLUTION.

It has been discovered by Rouyer that freshly precipitated sesquihydrate of iron, although an antidote for arsenious acid (arsenic of the shops), fails entirely to counteract the action of the arseniate or arsenite of potassa (Fowler's solution), but that a mixture of a solution of the sesqui-chloride of iron and the oxide of magnesium will counteract the effect of these salts, as well as the arsenious acid itself, and hence this mixture is always to be preferred to the hydrate in cases of poisoning by arsenic. The officinal solution of the sesqui-chloride of iron should first be administered, and afterwards the magnesia. In one hour after the administration of the antidote, a cathartic should be given. In all cases acid drinks (such as lemonade) are to be avoided, since the compounds they form are soluble.—*The Chemist and Druggist*.

ACTION OF SALICYLIC ACIDS AND THE SALICYLATES.

Chrono and Petrucci have made a series of experiments on these remedies, and have arrived at the following conclusions;—Both salicylic acid and the salicylates have the same biological action, but with the first local, with the latter general conditions are of most importance. Salicylic acid, both free and as a salt, lowers, in small doses, the temperature, though not to any extent. In large doses it not only does not depress it, but it actually augments it to a very marked extent.

Animals submitted to the daily consumption of the acid or of its salts, become rapidly thinner, and lose weight. The beats of the heart in the frog are increased in frequency, after the use of salicylate of soda, but in animals they are sometimes

reduced, sometimes increased in frequency, apart from the absolute dose administered; but with salicylic acid the frequency of the beats is always reduced. Lastly, salicylic acid constantly diminishes the frequency of the respirations, whilst salicylate of soda first augments and then reduces them (*Commentario Clinico*, Pisa, No. 14, 1878).—*The Practitioner*, November 1878.

DETECTION OF TRACES OF HYDROCYANIC ACID.

Böttger has devised a lecture experiment to demonstrate the presence of traces of this acid, and to show its direct production in bitter almonds or the kernels of plums and cherries by the action of water when heat is applied (*Pol. Notizbl.*, xxxiii, 15). Some freshly crushed bitter almonds are to be placed in a flask, two litres in capacity, and over them is to be suspended a long strip of Swedish filter-paper, which has first been moistened with an alcoholic extract of guaiacum (5 grammes of the resin in 100 cc. of alcohol), then dried and subsequently saturated with a dilute solution of copper sulphate (1 part of sulphate in 2000 parts of water). The strip of paper remains colourless until the crushed kernels are warmed with a little water when, in the space of a few moments, it is observed to acquire an intense blue colour ('*Polgt. Notizbl.*,' xxxiii, 15).

ANTIDOTE TO CARBOLIC ACID.

The Pharmaceutische Zeitung für Russland says that on the recommendation of professor Baumann, Dr. Sanftleben has used sulphuric acid in several cases of poisoning by carbolic acid with the best success, the phenol combining with the acid to form phenyl-sulphuric acid, which is not poisonous. He administered it in a mixture composed of diluted sulphuric acid 10·0, mucilage of gum 200·0, and simple syrup 30·0 grammes, in doses of a tablespoonful every hour.—*The Chemist and Druggist*.

Reviews.

Quid sit pulchrum, quid turpe, quid utile, quid non.—HOR.

Cooley's Cyclopædia of Practical Receipts and Collateral Information in the Arts, Manufactures, Professions, and Trades, &c. &c. Sixth Edition, Revised and partly Rewritten by Richard V. Tuson, F.I.C., F.C.S., Professor of Chemistry and Toxicology in the Royal Veterinary College. London: J. and A. Churchill, 1878.

THE editor of Cooley's 'Cyclopædia' being on the staff of this Journal, we can but direct the attention of our readers to the scope and leading characteristics of the work. Previous editions were published as a whole in one volume, whereas the present issue is appearing in monthly parts. Already eight numbers are in the hands of the public, while seven more have to be seen through the press; the book may then be bound up in two volumes. The last edition contained twelve hundred pages, the present will contain nearly seventeen hundred. The additional four hundred and eighty to five hundred pages of new and closely printed matter have been furnished by Professor Tuson, aided by a goodly number of contributors eminent in various departments of science, art, manufactures, &c.

Among the subjects discussed, will be found articles on Human and Veterinary Medicine, Hygiene, Agriculture, General and Applied Chemistry, Pyrotechny, Pharmacy, Brewing, Distilling, Dyeing, Cookery, also Domestic and Trade Receipts, and literally a host of other topics too numerous to mention here in detail. That the work is popular and highly valued is proved by the fact that it is now passing through its sixth edition, and by the circumstance that it has a very large sale both at home and abroad. Though we are debarred from saying anything directly in praise of the way in which Professor Tuson is performing his laborious task we may nevertheless state that in the many independent journals that have reviewed the book it is spoken of in terms of the highest commendation.

Mémoire sur le Traitement des Lésions Traumatiques des Synoviales Articulaires et Téndineuses par la Glycérine.
Deuxième partie de ce Mémoire. Par M. AUREGGIO,
Vétérinaire en Deuxième au 4e de Hussards à Sezanne
(Marne), &c.

WE have received the above, and, since to it was awarded the gold medal and 500 francs by the Committee of Medico-Chirurgical Pathology of the Central Veterinary Medical Society of Paris in 1877, wish to draw to it the attention of our readers. Our author tells us that the matter first came under his notice after reading one of the works of Demarquay on glycerine. He says:—"We are too much inclined to seek remedies in violent measures, and to consider as insignificant those which we are not compelled to regulate with care and circumspection." The investigation of the subject is, therefore, divided into the treatment of traumatic arthritis (1) by the blister and glycerine injections together (2) by continuous irrigations and glycerine injections; (3); by glycerine injections and dressings. The method in each division is illustrated by carefully described cases, and the whole are summarised in a recapitulatory table. The author gives the following *en résumé*:

"The treatment of articular wounds is very simple and easy of application according to our method. The common treatment—blood-letting, short diet, &c.—does not seem to us reasonable, since traumatic fever is always accompanied by loss of appetite. It is, therefore, improper to weaken the animal beforehand. By giving him, on the contrary, his ordinary food, or even a more substantial diet, we enable him to store up precious resources to resist the fatigues of a long course of treatment, during which lying down is for a long time prevented. Laxative agents also are often necessary to prevent and to oppose constipation. Enlargement of the synovial fistula by removal of *débris* from it is contra-indicated, since it tends to retard cicatrisation, and to give a more easy entry to air. The lameness and the state of the wound indicate the gravity of the lesions. Whilst the *elaudication* is little marked we may wait, only taking care of the wounds by douches or cold lotions. But as soon as it appears, as the part becomes hot and swollen, we should apply a large blister. The horse must not be moved, must be "racked up," and, if possible, slung. In every case glycerine is applied on the articular wound, and retained in a special manner. Injections of glycerine are to be com-

menced as soon as inflammation threatens to invade the synovial capsule. This is announced from the second to the fourth day by the appearance of the synovia. Pure glycerine only is to be injected into the joint. Continuous irrigations, the application of which, however, is difficult and often impossible, are useful adjuncts to the glycerine injections, especially in the case of severe articular lesions. We have advantageously employed the irrigation treatment during the day and glycerine dressings during the night (mixed treatment). Lastly, glycerine injections without either vesicatories or refrigerants have, in our hands, given excellent results, as our observations prove. They clearly indicate the therapeutic value of glycerine for traumatic diseases of joints."

This treatment presents some novelties, and, we believe, is well deserving of extensive trial. The method has been carried out with care by the author, and the *mémoire* seems to us well worthy of the award by the Société Centrale de Médecine Vétérinaire de Paris. The motto of the author is "La vérité est fille des faits."

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

MONTHLY COUNCIL, Wednesday, December 11, 1878. Present:—H.R.H. the Prince of Wales, K.G. (president), in the chair.

VETERINARY COMMITTEE.

The *Hon. W. Egerton*, M.P. (chairman), reported that four competitors had entered for the Society's veterinary prizes and medals. Dr. William Smith Greenfield had been appointed Professor Superintendent of the Brown Institution. Subject to the approval of the Governors of the Royal Veterinary College, the committee were desirous of obtaining the services of the Inspector of the College for the members on the usual terms, any special report required, or investigation of outbreak of disease, to be paid for like any other special report. The committee recommended that the grant of £250 be made to carry out experiments on the nature and mode of propagation of anthracoid diseases, under Dr. Burdon-Sanderson. The committee further recommended that the secretary be instructed to ascertain from the General Steam Navigation Company whether, and on what terms, they would place at the disposal of the society a quarantine station for the reception of foreign animals entered for exhibition next year, and also the terms on which the company would provide special steamers for their conveyance. The committee had

met six times, and made six reports; and they recommended that the following be the committee for the ensuing year:—Earl Cathcart, General Viscount Bridport, Sir M. White Ridley, Bart., the Hon. W. Egerton, Sir Brandreth Gibbs, Professor Brown, Mr. Chandos-Pole-Gell, Mr. W. Duguid, Dr. Wm. Smith Greenfield, Mr. M. J. Harpley, Colonel Kingscote, Mr. James Odams, Mr. G. H. Sanday, Dr. J. Burdon-Sanderson, Professor Simonds, Mr. W. H. Wakefield, Mr. Wm. Wells, Mr. Jacob Wilson.

GENERAL MEETING,

December 12th, 1878.

Extracts from Report of the Council.

THE preparations for next year's meeting of the society, which will assume the form and proportions of an International Agricultural Exhibition, are in active progress. A very convenient site at Kilburn, one hundred acres in extent, has been obtained from the Ecclesiastical Commissioners, whose agents have shown themselves most desirous of furthering the objects of the Society. The land selected is situated between the London and North Western and the North London Railways, and adjoins the new Salusbury Road station on the former, and the Kensal Green station on the latter line. It is three quarters of a mile from the West-end station on the Midland Railway, and the same distance from the Westbourne Park station on the Great Western Railway.

The prize-sheet will contain classes for all the distinctive breeds of English horses, cattle, sheep, and pigs, and also for the distinctive breeds of foreign stock from countries which are not prohibited by any Orders in Council under the Contagious Diseases (Animals) Act, 1878. Prizes will also be offered for asses, mules, goats, butter, cheese, wool, hops, seed-corn, and meat. The Shorthorn Society have offered prizes for foreign shorthorns, the hop-growers have offered the prizes for English-grown hops, and the Mansion House Committee have offered the prizes for foreign stock and produce.

The Exhibition will commence on Monday, June 30th, and will close on Monday evening, July 7th.

During the past year the Legislature have amended the law relative to the contagious diseases of animals of the farm, giving additional protection against the importation of such diseases with foreign animals, and securing greater uniformity of action amongst local authorities in the event of outbreaks within the United Kingdom. The Council have continually urged the necessity of adopting measures based on these principles, and they trust that the recent Act, and the Orders of the Privy

Council based upon it, will not only prevent to a great extent those losses which English farmers have hitherto suffered from the outbreaks of contagious diseases amongst their flocks and herds, but also enable them to increase their stock profitably, on account of the diminished risk which breeding on an extended scale will henceforth entail.

The experiments upon pleuro-pneumonia have been continued during the greater part of the year at the Brown Institution, under the superintendence of Dr. Burdon-Sanderson, whose complete report will appear in the next number of the *Journal*. Very valuable indications have been obtained, but unfortunately one of the provisions of the new Contagious Diseases (Animals) Act prevents the further continuance of these investigations. With the sanction of the Council, Dr. Burdon-Sanderson has commenced a series of researches into such diseases as splenic apoplexy and quarter-evil, the nature and causes of which are at present more or less obscure.

Four candidates have entered to compete for the society's medals and prizes offered to veterinary surgeons of not more than fifteen months' standing, for proficiency in cattle pathology, and the examination will be held at the Royal College of Veterinary Surgeons in the course of the ensuing month.

CENTRAL VETERINARY MEDICAL SOCIETY.

Professor Axe in the chair. November 7th, 1878.

The *Secretary* read the minutes of the last meeting, which were approved and signed. The secretary then exhibited the tooth of a horse referred to at the last meeting.

Professor Axe said, if there were no other specimens to be exhibited, or cases to be recorded, he would ask their attention while he complied with a request made to him by the secretary, and introduce the subject for the evening. In the absence of other matter he congratulated himself on having for some time past devoted his attention to a subject which he thought was of the highest interest to them. He alluded to that affection of the skin which had prevailed to a very great extent among horses, both in the metropolis and in numerous provincial towns, and which had doubtless come under the experience of all of them to a greater or less extent. His object in bringing the matter before them was, firstly, to relate his observations with regard to the affection; and secondly, to ask for the experience of all who were able to throw light on the pathology of the malady. During the past three or four months the disease in question had pre-

vailed in the form of an epizootic, and had extended over a very extensive tract of country. It was more especially prevalent in horses ranging from three to six and seven years old. He had not met with more than one or two cases in which it had occurred in aged animals. It differed from the generality of skin affections in the absence of any decided evidence of pruritis. Animals suffering from the disease showed no desire to rub the parts, but displayed great local sensibility and soreness. The hyperhæmic condition of the skin was followed by papulation, and superficial suppurative action was quickly established. The papules were usually discrete, and appeared in greatest numbers on the withers and back. They varied in size from that of a pea to that of a hazel nut, and their bases were more or less circumscribed and indurated. Although commonly occurring on the back and withers, it was by no means confined to that region. It was a general skin disease, and its more frequent appearance on the parts indicated might probably be explained by the mechanical irritation of the saddle co-existing with the essential pathogenetic condition of the system. Once originated it did not cease with the primary eruption, but produced in a large majority of cases a succession of papules. In them pus formation quickly commenced and continued for from three to fourteen days. The pus, epidermis, and plastic matter thrown out during the process ultimately dried into a thick, dark brown scab. If the scab were removed prematurely a superficial ulceration would be exposed, somewhat deeper in the centre than at the circumference. On the other hand, if allowed to remain there was left a very slight cicatrix. In some instances the eruption is of very limited extent and of short duration, or it may extend over several weeks or even months. He had remarked that in some parts of the body the skin eruption had assumed the form of urticaria. Especially was this so in depending parts, as the under surface of the abdomen. The particulars of two cases which had been recently brought under his notice were worthy of being related. One referred to a five-year-old horse, on whose skin an eruption developed as just described. The rug employed for him was subsequently used for a five-year-old cob. In the course of a few days the second horse became affected, and suffered a severe attack extending over several weeks. It might appear from these facts that the disease was a contagious disease, but in order that a too hasty conclusion might not be drawn, he ought to state that during the day previously to the rug being placed upon the second horse he had for the first time received as food some Indian corn. At the present time he (the president) was disposed to attribute the malady to the nature and change of the diet rather

than to the fact of the tainted rug having been placed on the healthy animal. If they regarded the cause of the malady as existing in the rug, it should be understood that it is not necessarily to be viewed in the light of a contagion proper. It was well known that purulent matter and other products of disease, when applied to healthy skin, may have the effect of exciting an eruption by the mere irritation which they set up. After fully considering all the facts and circumstances surrounding the disease, he had arrived at the conclusion that it was essentially an ecthyma. Of the exact causation and dissemination of the malady he hoped to learn much from those who had had under their care large numbers of animals, and whose facilities for determining the cause of the affection were greater than his. The pathological condition under consideration was not uncommon among our domesticated animals. Horses, oxen, sheep, and dogs were all more or less liable to ecthyma. Not long ago he had the opportunity of examining the skin of one of a number of sheep, all of which suffered more or less from acute ecthyma, and in that instance the lesions were identical with those he had described. Referring to the causes of the affection, he regarded them as having a constitutional and also a local origin. It would appear that the case he had mentioned to them was due either to contagion, pus, irritation, or the constitutional influence of Indian corn, and he was disposed to regard the latter as the real cause of the affection. Other influences no doubt may, and do, operate as predisposing causes; such, for example, as crowded and badly ventilated stables, bad drainage, insufficiency of food and overwork, or indeed anything that conduces to debility and systemic derangement. As exciting causes, experience pointed to mechanical and chemical irritants and the irritation of parasites. In conclusion he hoped that the brief observations he had made would be sufficient to excite all the interest which the subject deserved, and that those present would freely contribute their experience to the members of the society.

Mr. Fleming said he was sure the Fellows of the Society were very much obliged to the president for bringing the matter before them. There was no doubt a large prevalence of the malady. He should not have been there on that occasion, but for his hope that the subject might be introduced. He came there, not because he had seen anything of the malady, although his regiment had been stationed in London in the Regent's Park barracks, one of the most unhealthy barracks, perhaps, in this part of the country, but still not a single case had occurred among the horses of the regiment, the strength of which was 272 horses, and 52 officers' chargers. That might be regarded as a rather curious circumstance, and one, perhaps, which rather

militated against one of the causes advanced by the president, as possibly being in operation in producing the malady, viz. bad ventilation and bad drainage, because the stables were very badly drained, and the ventilation was decidedly defective. The only case he had seen was that of an officer's horse, which had been purchased and brought from a horse dealer's stable. That horse was affected with the malady, but was evidently recovering, and at the end of a week or ten days the skin was quite healthy. He had received a letter from Bath a few days ago from a brother officer, who said that the disease there was a perfect nuisance, that almost every horse in Bath was affected with it, and asking his opinion as to its nature. He had made some inquiries among the dealers who supply the officers' chargers, and had found that they considered the malady to be contagious; and he thought the instance the president had adduced, of a blanket from an unaffected horse having conveyed the disease to a healthy animal, was one which rather supported that idea of the dealers. In the first place, they knew that pus in a fluid state would reach the skin of a horse somewhat readily, and might produce a certain amount of irritation, but on the blanket it would be dry; and they could scarcely believe that dry pus falling on the hair of a horse's skin would have so readily produced this particular disease. He was very much inclined to think it must be contagious. However, having had no experience of the malady, he had come there more to be informed than to give his experience. He had been told by the horse dealers that horses which have not been clipped suffer less from the malady; they told him they had no cases of the disease with horses unclipped and unsinged; possibly that might go towards explaining the causes of the malady. The question was, did the disease affect harness or saddle horses, or did it affect both? There was one skin disease very common—a sort of eczema, which commences under the saddle, and very often extends to the loins, and the sides, and the shoulders; with it there is always a large amount of itching, and it is very troublesome often with troop horses. There were sometimes a large number laid up, especially in the summer; they thought the lining of the saddle in hot weather produces this irritation of the skin from the bearing of the saddle. He could scarcely believe that maize would be likely to produce the malady. They had in the stables horses that were fed on maize, and yet that disease had not occurred. He was rather inclined to think that the disease had been imported into the country; the dealers said that it was not present in the stables till they had some foreign horses. It was a very interesting disease, because there were so very few maladies of that nature in the horse that are contagious, that that one, if contagious, was almost excep-

tional; and as it was a very troublesome malady, and to a large extent unfitted a horse for work, he thought it was just as well that they should be able to ascertain whether it was infectious or contagious. He had written to his friend at Bath advising him to take all possible precautions to prevent his horses coming into contact with other horses, directly or indirectly, and had told him his own suspicions that the malady was contagious. His friend's horses had escaped so far, but he was naturally anxious, as almost every horse in the city had the affection.

Mr. Rowe said that, although his district was very near *Mr. Fleming's*, he had not met with a single case. He was not aware there was any epizootic of any description till the president mentioned it. *Mr. Mavor* had told him that he had seen the disease in a large number of horses and in his children. He said—"If you mean the boil disease, my children have had it as well as the horses." That morning he had spoken to *Mr. Daniel*, who told him he had had over 200 horses affected by it, some severely, in his own yard at Piccadilly, but that the horses were chiefly American horses connected with the tramway work.

Mr. Burrell, junr., said when he read Professor *Axe's* notice as to the epizootic skin disease, he was in some doubt as to the particular disease to which he referred. In his own practice two skin diseases had been very prevalent for the last month, one of them he should call eczema, and the particular disease to which the president referred "Canadian boils," and which, he was inclined to think, was caused by a vegetable parasite, something analogous to ringworm. It was certainly contagious. He remembered one instance in which that was shown very markedly; one of the horses was introduced into a stable where all the other horses were healthy, and the clothing was changed about so that the same suit was not always placed on the same horse, and the disease went fairly through the stable, and every fresh horse introduced that had the clothing on had it. The position of the disease about the withers he thought tended rather to prove the disease to be contagious. It could very readily be understood that it would be carried on the pad. The cloth lies closer to the skin about the withers. If correct in viewing it as a parasitic disease, he thought it would tend to prove the correctness of that view, that the boils broke out just about the withers. He also had noticed it along underneath the crupper, on either side of the tail, and under where the kicking strap would come. He might also say that the disease had occurred equally among saddle horses and harness horses, and whether clipped or unclipped there was no difference in that respect. He had treated the cases as parasitic in most instances, dressing the so-called boils with tincture of iodine, or a pretty powerful solution of

sulphate of zinc, and they then appeared to die away. If any fresh boils showed themselves he had treated them in the same manner.

Mr. Rowe would just add that it had been briefly communicated to him that morning by *Mr. Daniel* that he had examined the skin very particularly for parasites, and failed to find any. The chief result he noticed was that as the animal recovered, one or two particular hairs stood perfectly upright, and with the least force you could pull out the whole of them, leaving the vesicle.

Mr. J. Laurence Hamilton said, he trusted the interest he took in veterinary matters, although he did not belong to that branch of the profession, would lead them to pardon him if he rose to ask for information on the matter which had been brought before the meeting so ably and so clearly by the President. He would like to inquire whether inoculation had been practised, and, if so, with what result. He would venture to think that inoculation would at once test whether the disease was contagious or not, for it would be a direct experiment, and would give direct results. As regards the search for parasites he knew that in diseases of the human system, unless you search for the parasites in the very early stages you will not find them; and it was not every parasitical disease in which even the most skilful, the most careful, and the most cautious observers would in every case succeed in finding the parasites. Thus, taking an ordinary disease, well known to most of them—though he hoped only from hearsay, or in the person of others—that vulgar disease termed itch; in the adult subject it was extremely difficult to find the insect that produced the disease; and in babies, unless you got the baby in the early stage of the disease, it was almost impossible to find it, and if any medicines or medicaments had been used they would fail to find the parasites. Even among medical men there were not many who were able to find the itch insect, and one should not give up the search for a parasitical insect because one man was not able to find it; it did not follow that his successor might not be more successful. As regarded the particular disease in question, he might say that in May he happened to have a couple of horses standing at one of the largest livery stables in London. The owner of these stables had three or four branch establishments, and he was informed, by a man employed in the yard, and likely to know what was going on, that the owner had himself (in or about June) some forty or fifty horses laid up with the complaint. He had himself been so occupied at the time with other matters, and being far from well, he was unable to investigate the subject further. As regards a rug covered with scabs or dirty matter producing a rash nothing was more likely; and wherever there was a tendency in skin diseases to an eruption,

an eruption will always be induced, if not there already, or be increased, if it be there already, by friction.

Mr. Barrell remarked that he thought the Canadian boil or pustule had very unhappy names. The disease appeared to him to be like a papule in the first instance; then there was a hard crust formed; and the matter was found on dressing the crust, which was hard, dark, and yellow, with suppuration underneath it. It did not appear like an ordinary skin eruption, but firstly there was a hard elevation, then a dry crust; and if you broke that up you came to the pustular matter.

Mr. Fleming inquired if there was any general disturbance in the health of the animals, and whether the temperature had been taken, and was the appetite impaired, or were there any other general symptoms of disturbance? He had forgotten to mention, that in regard to the living animal they could very readily examine the skin by clipping out small morsels of the skin with sharp scissors where diseased. Dr. Thien and himself had recently been investigating some of the maladies of the horses' skin, and they had been able to clip out little morsels with a sharp pair of scissors, so easily as to be almost painless to the animal; thus they could get the living skin and prepare it directly for observation. He thought if this method were pursued they would be able to arrive at the pathology of the disease and be able to discover whether it was due to a parasite. He thought not, because there was no irritation; whereas in parasitic diseases they usually had a large amount of local irritation, but there was nothing of the kind in the cases which had been mentioned. He was rather inclined to think it was not parasitic. However, if any gentleman would adopt his suggestion and snip out a small portion of the skin with sharp scissors, and give it to any histologist, or he would himself take a portion, he thought they would be able to discover something of the seat of the malady. He also thought that inoculation would be a very good thing, it was so readily performed on the horse, that there should be no hesitation whatever in resorting to it, and that would at once test whether the malady was transmissible by the conveyance of the matter of the pus from a diseased animal to a healthy one, and settle the question so far.

Mr. Woodger, junr., said he could not throw much light on the subject, as he had known but two cases, both of which were foreign horses, and both in one stable. They showed the disease some three days after being purchased from a dealer. They soon recovered, and the gentleman who possesses them says they have had no return of the disease. He did not think the maize had anything to do with the disease. Among the General Omnibus Company's horses which he attended, where there were about

2000 horses, he had not seen an individual case, and amongst his private customers, whose horses were fed partly on maize and partly on corn, he had not seen a case beyond the two mentioned, and those were both foreign, but were *not* American. He believed the disease answered in those animals precisely to the description given by the president. There was not the slightest itching on it; and no appearance of skin disease down the legs. One of the animals was literally covered; that was the horse that was the first to take the disease. He might add that the horses were both of them clipped, and the omnibus horses are never clipped in winter time.

Mr. Broad said he was particularly struck in one case by the circular appearance of the wound after the scab had fallen off. He examined it, and found a scab under the forepart of the saddle. It spread all over the withers and the back. As each scab tumbled off there was a perfectly circular depression left that yielded to simple local treatment, and did not affect the constitution in any way. He had had another case which might be of the same nature, or might not. It had been seen by *Mr. Mavor*. This also broke out in numerous small circular patches all over the sheath. There was a great quantity of discharge. In that case there was no constitutional disturbance till a scab appeared high up in the groin, and (possibly from the situation) produced intense pain. Poulticing was tried at first, but that aggravated it. At *Mr. Mavor's* suggestion they tried some sulphate of calcium, and a simple local wash, under which treatment it soon recovered. In his opinion it was another form of the same disease.

Mr. Shaw said he had seen many of these cases, and those he had seen had been principally among the tram horses, and they were nearly all American horses. There were several cases to be seen now at Cambridge Heath. The scab had been almost like a ringworm, and one of the horses that had been turned out at grass up at Clapton was almost hairless when fetched up.

Professor Axe said it appeared to him that two very important questions were suggested by the observations made. These were, first—was it a contagious disease, and, if so, secondly, was it of a parasitic nature? He might say that he had taken some pains to determine the latter question. He knew too well the difficulties attending on the detection of parasites to make any definite remarks in reference to that question. It was one that should not be hastily disposed of at any time, inasmuch as, in accordance with the suggestion of *Mr. Hamilton*, very considerable difficulty attaches to the finding of parasites, even of such parasites as the *acarus*, a comparatively large one, as compared with some forms of

vegetable parasites. On that account he did not give expression to any opinion either one way or another. It was a matter he was now farther investigating. With reference to experiments in connection with the malady, he did not refer to them, because he was anxious to know from those who had experience in the malady whether there was anything tangible in this question of Indian corn, that being a question he desired to settle before resorting to the experimental method. Now, that he was assured on that point by those who had experience in connection with large numbers of horses which were fed on Indian corn, he felt at liberty and perfectly justified in putting it to the test of experiment, which he should take the earliest opportunity of doing. Mr. Burrell had suggested that the eruption did not "develop itself in the form of vesicles." It was not really a vesicular eruption, and the disease was not of an effusive but of a formative character. As soon as the papulæ are developed suppuration commences immediately, and progresses, simply raising up the epidermis; and the epidermis, together with pus and the plastic matter thrown out, became mingled together and developed a scab. There were no vesicles present. Thus it would accord more essentially with a formative than a diffusive malady. He might note that it was suggested to him by one or two dealers that the disease prevailed to a much larger extent in American horses than in our English horses; and one of these dealers had further suggested that the disease was contagious. He did not attach much importance to that single statement, although he had such a striking example in the case he had described to them. Nevertheless, he desired to have some expression of opinion in regard to the effects of Indian corn. Mr. Burrell had spoken of the inappropriateness of the term "boil." Pathologically, it was inappropriate. A boil was a very different thing altogether. The deeper structures of the skin were not, except in special cases, affected, and there was not that sloughing and that destruction of skin tissue which takes place in what was known as a boil. The question had been asked as to the constitutional condition, and he might say that he had not recognised any constitutional disturbance, except in one case, and that was where the back had been bruised, and inflammatory action had been set up in the tissues of the skin, together with sloughing.

The Secretary moved, and *Mr. Hamilton* seconded, an adjournment of the discussion till the next meeting.

Adjourned at 8.45.

THE NATIONAL VETERINARY BENEVOLENT AND MUTUAL DEFENCE SOCIETY.

At the last General Meeting of the above Society, held in Manchester on the 10th of March, 1875, a Resolution was passed that an annual Financial Statement or Balance Sheet should be recorded in the *Veterinarian* and *Veterinary Journal*. In obedience to such Resolution I beg to submit the following Statements.

THOMAS GREAVES,
Hon. Treasurer.

Knott Mill, Manchester.

“The National Veterinary Mutual Defence Society.”
Treasurer’s Financial Statement, 1878.

| <i>Cash Received.</i> | £ | s. | d. | <i>Cash Paid.</i> | £ | s. | d. |
|--|------|----|----|---|------|----|----|
| Balance of account on Dec. 7th, 1877, in Bank and in hand | 341 | 11 | 2 | 1878. Jan. 9th, by cash overpaid into bank last settlement by treasurer . | 9 | 9 | 4 |
| Subscriptions of members from Dec. 7th, 1877, to Dec. 14th, 1878 | 89 | 9 | 0 | Ditto postage, room, &c. . | 1 | 2 | 5 |
| Bank interest, Dec. 24th, 1877 | 3 | 15 | 7 | Ditto, printing, advertisements, stamps, by secretary | 2 | 1 | 6 |
| Bank interest, June 24th, 1878 | 2 | 15 | 0 | Nov. 19th, cash paid Mr. Murdoch | 37 | 18 | 4 |
| Overpaid into bank | 2 | 1 | 6 | Nov. 27th, ditto | 1 | 0 | 0 |
| | £439 | 12 | 3 | Dec. cash in bank | 388 | 0 | 8 |
| | | | | | £439 | 12 | 3 |

Dec. 14th, audited and found correct,
JOHN ALBERT TAYLOR.

“The National Veterinary Benevolent Society.” *Treasurer’s*
Financial Statement, 1878.

| <i>Cash Received.</i> | £ | s. | d. | <i>Cash Paid.</i> | £ | s. | d. |
|---|------|----|----|--|------|----|----|
| Balance of account on Dec. 7th, 1877, in Bank and in hand | 871 | 17 | 7 | 1878. Dec., cash paid for the late Mrs. Brown’s children | 10 | 0 | 0 |
| Subscriptions of members from Dec. 7th, 1877, to Dec., 1878 | 10 | 0 | 0 | Dec. cash in bank | 888 | 3 | 7 |
| Bank interest, Dec. 24th, 1877 | 9 | 13 | 10 | | | | |
| Bank interest, June 24th, 1878 | 6 | 12 | 2 | | | | |
| | £898 | 3 | 7 | | £898 | 3 | 7 |

Dec. 14th, audited and found correct,
JOHN ALBERT TAYLOR.

60 VETERINARY BENEVOLENT AND MUTUAL DEFENCE SOCIETY:

Amount received from November 25th, 1877, to December 14th, 1878.

| | £ | s. | d. | | £ | s. | d. |
|----------------------|---|----|----|----------------------|-----|----|----|
| December, 1877. | | | | Pyatt, Brothers | 1 | 1 | 0 |
| Edwin Faulkner | 1 | 1 | 0 | Stanley & Son | 1 | 1 | 0 |
| Broad & Woodyer | 2 | 2 | 0 | John Howard | 0 | 10 | 6 |
| Benjamin Cartledge | 0 | 10 | 6 | T. D. Lambert | 1 | 1 | 0 |
| W. F. Wragg | 4 | 4 | 0 | Thomas Greaves | 1 | 1 | 0 |
| J. M. Roberts | 2 | 2 | 0 | George Newsome | 0 | 10 | 0 |
| Joseph Leather & Son | 2 | 2 | 0 | J. A. Taylor | 1 | 1 | 0 |
| 1878. | | | | G. H. Darwell | 1 | 1 | 0 |
| Francis Blakeway | 1 | 1 | 0 | J. M. Broad | 1 | 1 | 0 |
| Tedbar Hopkins | 1 | 1 | 0 | John Gerrard | 0 | 10 | 6 |
| James Withers | 1 | 1 | 0 | James Howel | 1 | 1 | 0 |
| John Carless | 1 | 1 | 0 | W. Woods | 0 | 10 | 6 |
| W. Carless | 1 | 1 | 0 | W. Elam | 2 | 2 | 0 |
| George Carless | 1 | 1 | 0 | J. H. Cartwright | 2 | 2 | 0 |
| Edwin Faulkner | 1 | 1 | 0 | J. Hill | 2 | 2 | 0 |
| James Brookes | 0 | 10 | 0 | James Martin | 1 | 11 | 6 |
| Joseph Welsby | 1 | 1 | 0 | John Lawson | 1 | 1 | 0 |
| James Moon | 1 | 1 | 0 | Alexander Lawson | 1 | 1 | 0 |
| John Markham | 0 | 10 | 6 | Thomas Taylor | 1 | 1 | 0 |
| Thomas Walley | 0 | 10 | 6 | Gilbert Heyes | 1 | 1 | 0 |
| J. D. Overed | 0 | 10 | 6 | R. H. Dyer | 1 | 1 | 0 |
| John Gregory | 0 | 10 | 6 | J. B. Taylor | 1 | 1 | 0 |
| Richard Reynolds | 0 | 10 | 6 | J. L. Faulkner | 1 | 1 | 0 |
| E. Hodgkinson | 0 | 10 | 6 | Henry Blunt | 1 | 1 | 0 |
| J. C. James | 0 | 10 | 6 | John Cuthbert | 0 | 10 | 6 |
| J. L. Barling | 0 | 10 | 6 | Duncan Hutcheon | 1 | 1 | 0 |
| H. R. Perrin | 1 | 1 | 0 | George Cave | 1 | 1 | 0 |
| O. J. Hill | 1 | 1 | 0 | D. R. Sourby | 0 | 10 | 6 |
| F. J. Samson | 1 | 1 | 0 | E. Price | 3 | 3 | 0 |
| T. G. Proctor | 1 | 1 | 0 | H. J. Goodall | 1 | 1 | 0 |
| E. Meek | 1 | 1 | 0 | John H. Ferguson | 1 | 1 | 0 |
| James Bale | 0 | 10 | 6 | Henry Thompson | 1 | 1 | 0 |
| C. W. Elam | 1 | 1 | 0 | John Bell | 1 | 1 | 0 |
| Js. Woodyer | 2 | 2 | 0 | Joseph Carlisle | 1 | 1 | 0 |
| Thomas Gregory | 0 | 10 | 6 | P. E. Rothwell | 1 | 1 | 0 |
| B. H. Russell | 0 | 10 | 6 | Peter Taylor | 1 | 1 | 0 |
| Henry Olver | 0 | 10 | 6 | Wm. Augustus Taylor | 1 | 1 | 0 |
| E. Hodgkinson | 0 | 10 | 6 | September 20. | | | |
| J. J. Collins | 0 | 10 | 6 | R. W. Murdock | 5 | 0 | 0 |
| W. J. Schofield | 0 | 10 | 6 | December 6. | | | |
| E. Nuttall | 0 | 10 | 6 | W. Dobie | 1 | 1 | 0 |
| A. Rushall | 1 | 1 | 0 | Thomas Secker | 1 | 1 | 0 |
| James Freeman | 0 | 10 | 6 | George Morgan | 1 | 1 | 0 |
| John Freeman | 0 | 10 | 6 | W. A. Harber | 2 | 2 | 0 |
| Joseph Freeman | 0 | 10 | 6 | W. Dacre | 1 | 1 | 0 |
| William Broughton | 0 | 10 | 6 | December 14. | | | |
| Mr. R. W. Murdock | 0 | 10 | 6 | Joseph Leather & Son | 2 | 2 | 0 |
| Joseph Carter | 0 | 10 | 6 | | | | |
| J. W. Anderson | 0 | 10 | 6 | | | | |
| T. D. Broad | 1 | 1 | 0 | | | | |
| | | | | | £99 | 9 | 0 |

Examined and found correct, December 14th, 1878,

JOHN ALBERT TAYLOR.

THE TYPHOID FEVER OF SWINE ORDER OF 1878.

AT the Council Chamber, Whitehall, the 17th day of December, 1878. By the Lords of Her Majesty's Most Honorable Privy Council.

PRESENT: Lord President, Lord George Hamilton.

The Lords and others of Her Majesty's Most Honorable Privy Council, by virtue and in exercise of the powers in them vested under the Contagious Diseases (Animals) Act, 1878, and of every other power enabling them in this behalf, do order, and it is hereby ordered, as follows:

1. This Order may be cited as The Typhoid Fever of Swine Order of 1878.

2. This Order shall take effect from and immediately after the twenty-third day of December, one thousand eight hundred and seventy-eight.

3. This Order extends to Great Britain only.

4. In this Order—

The Act of 1878 means The Contagious Diseases (Animals) Act, 1878:

Other terms have the same meaning as in the Act of 1878.

5. Typhoid fever of swine (otherwise called soldier disease or red disease) shall be deemed to be a disease for the purposes of the following sections of the Act of 1878 (namely):

Section thirty (slaughter and compensation).

Section thirty-one (notice of disease).

Section thirty-two (Orders of Council).

Section fifty (powers of police).

Section fifty-one (power of entry).

And of all other sections of the Act containing provisions relative to or consequent on the provisions of those sections, including such sections as provide for offences and procedure.

6. The provisions of the undermentioned Articles of the following Orders shall, so far as they may be applicable, apply to typhoid fever of swine and to places where that disease is found to exist (namely):

(a.) The Animals Order of 1878—

Articles eighteen and nineteen (movement or exposure of animals).

Article twenty (movement of dung).

Articles twenty-one and twenty-two (carcasses).

Articles twenty-three, twenty-four, twenty-five, twenty-seven, twenty-nine, thirty-two, and thirty-three (general provisions).

(b.) The Cleansing and Disinfection Order of 1878—

Articles ten, eleven, twelve, thirteen, and fourteen (cleansing and disinfection).

7. A Local Authority shall cause all swine affected with typhoid fever to be slaughtered, and shall, out of the local rate, pay to the owner thereof, by way of compensation for every head of swine so slaughtered, one half of its value immediately before it became so affected, but so that the compensation do not in any case exceed forty shillings.

8. No swine shall be moved out of a pig-stye, shed, or place where typhoid fever exists, or has within six days existed, except for the purpose of being slaughtered, and with a licence of the Local Authority. That licence shall be available for twelve hours and no longer, and shall specify the place to which the swine are to be moved for slaughter. The swine shall be moved to that place under the direction and in charge of an Inspector or other officer of the Local Authority, who shall enforce and superintend the immediate slaughter there of the swine, and shall report the fact of the slaughter to the Local Authority.

9. Where a head of swine is seized in accordance with the provisions of Article 19 of The Animals Order of 1878 the same shall be slaughtered in accordance with the provisions of this Order.

C. L. PEEL.

Veterinary Jurisprudence.

PROFESSIONAL FEES.

COURT OF QUEEN'S BENCH.

November 27th, 1878.

Before Mr. JUSTICE MELLOR and a Common Jury.

PRITCHARD v. M'MAHON.

ALTHOUGH the amount sought to be recovered in this action was small, the question raised is of considerable public importance, being whether a witness who attends in obedience to his subpoena is entitled to remuneration for his loss of time as distinguished from his expenses.

Mr. Murphy, Q.C., and Mr. Jervis appeared for the plaintiff; Mr. Gully, Q.C., for the defendant.

The plaintiff is a veterinary surgeon and a Professor of the

Royal Veterinary College of London, and the defendant is a horse-dealer living in Ireland.

In 1877 the defendant brought an action against a Mr. Franks to recover the price of some horses. The plaintiff was served with a subpoena to give evidence on behalf of the plaintiff in that case, the present defendant. It was uncertain when the case would come on, and for nine days, until he received a letter from the solicitors for the defendant, he did not know whether he would have to attend the trial or not, and he could not make any professional engagements for those days, not knowing whether he would be able to keep them or not. On the 30th November the case was in the list for the day, and the plaintiff attended in court; but owing to the turn which the case took he was not called as a witness. He was paid a guinea for conduct money when the subpoena was served, and before action another guinea was tendered to him, and, being refused, was paid into Court. He claimed two guineas a day for loss of time for each of the nine days for which he had to hold himself in readiness, and five guineas for the day on which he attended the trial. Other actions are pending by veterinary surgeons who were also served with subpoenas, but it had been agreed to try this case as a test case.

His Lordship, upon these facts, directed judgment to be entered for the defendant, following a case in the Court of Queen's Bench, in which it was held that, as the witness was bound to obey the subpoena, there was no consideration for any promise which could be inferred on the part of the person serving him to pay.—*Times*.

FOOT-AND-MOUTH DISEASE.

HORSHAM PETTY SESSIONS.

EXTRAORDINARY CATTLE DISEASE CASE.

JOHN PULLEN was charged with taking animals to Warnham, contrary to the Contagious Diseases (Animals) Act. Mr. Cotching was for the prosecution. George Turner, the man in charge of the cattle, was charged with driving the cattle at the same time and under the circumstances named. Mr. G. Feltham (of Portsea), appeared for the defendants.

Superintendent Henderson said that on the 6th instant he saw eleven yearlings on the road. They were "fobbing" at the mouth, and some of them were lame. He called Mr. Callow, and had the beasts examined, and he found that the animals were suffering from foot-and-mouth disease. A boy was with the cattle, and witness told him to fetch the persons in charge. The two defendants then came up, and Pullen admitted the ownership. Two of the animals afterwards died.

Mr. Callow, Jun., veterinary surgeon, said he was inspector

for the Horsham division. The animals were Irish calves or yearlings, and several of them showed symptoms of foot-and-mouth disease. Cross-examined.—*Mr. Callow* said that two of them were certainly suffering from the disease, and in a very pronounced form. They had been in that state, he should think, about three days.

Mr. Callow, Sen., said he saw the calves on the North Parade on the 7th instant, when they were suffering from foot-and-mouth disease.

The defence was that the animals were not suffering from foot-and-mouth disease, and in support of his contention *Mr. Feltham* called *Mr. R. Stock*, veterinary surgeon, who said he had inspected the animals at Lewes, and they were not suffering from foot-and-mouth disease. He had seen them since at Horsham in a field, and they were not suffering from the disease, but had colds. He thought the death of two animals was from inflammation of the bowels, and not foot-and-mouth disease.

Mr. T. Gregory, veterinary surgeon, said he inspected all the beasts (on behalf of his father) which were imported from Spain. He could not find a single symptom of foot-and-mouth disease at the *post-mortem* examination made of the two dead animals six days after the alleged disease was detected.

Mr. Castledine, another veterinary surgeon, deposed that he had fifty years' experience. He also examined the beasts surviving in the field; and he could not find any symptoms of foot-and-mouth disease.

Mr. Sergeant, a retired butcher, gave corroborative evidence, and after consulting together for a short time the Bench dismissed the case, which had lasted nearly three hours and created much interest among agriculturists.

THE FLEMING TESTIMONIAL FUND.

Letter from *Mr. J. Woodroffe Hill*, F.R.C.V.S.,
Wolverhampton.

SIR,—Being one of the members who attended the first Committee Meeting in Red Lion Square, for the purpose of starting the "Fleming Testimonial Fund," I feel exceedingly pained at the selfishness or apathy displayed by those whom one would have imagined should have been the first to come forward to recognise *Mr. Fleming's* worth in a tangible and generous form. Ten months have now elapsed since the inaugural meeting, and during that long period, from a body of professional men numbering more than two thousand, only a sum unworthy to be called an acknowledgment of our greatest veterinary author's talents has been collected. One can scarcely credit the fact that not 140 members have responded to the call out of our large body. It is almost a farce to present this miserable amount as a testi-

monial to one who, surely has long ere this, proved himself to deserve better of his professional brethren. I will not advocate his claims on the agricultural and medical professions, strong as they are. I allude simply to ourselves. Can it really be supposed that only the small number who have contributed out of the entire body at home and abroad appreciate veterinary literature? Of all those who have passed from our midst, and those still present with us, not one can be mentioned who has ever done so much, and that so unselfishly, for the benefit of our profession and the animal world at large, as our staunch friend, Mr. Fleming. There are those, I know, who would gladly increase the amount of their subscriptions rather than the sum should fall below what was anticipated. Surely the examination fee of one horse is not a ruinous amount to the poorest among us! We do not hesitate to befriend associations that protect our interests, and yet reluctance is displayed in tendering a few shillings as an acknowledgment of the good done to our cause through the high-class literature Mr. Fleming has conferred on us—literature which is acknowledged throughout the press as authoritative and unsurpassed, and which has supported the veterinary surgeon in more than one legal case. On account of my inability to attend the meetings which followed the preliminary one, I have written to the Secretary suggesting that the fund should be kept open until after the spring examinations, when perhaps some of the “new blood” will show their appreciation of the knowledge derived from the perusal of Mr. Fleming’s works. “Good that comes too late is good for nothing.” Let those, therefore, who have hesitated delay no longer, but present our mutual friend with the reward he has so richly earned.—Your’s, &c.

To the Editors of the ‘Veterinarian.’

[We give place to the foregoing letter with much inconvenience to ourselves and to the printer, as it arrived so very late. This accounts for its being inserted at the end of our present number. *Employés* cannot be deprived of their Christmas holiday, nor will they any more than their employers.]

ARMY APPOINTMENT.

WAR OFFICE.

VETERINARY DEPARTMENT.—Francis Raymond, gent., to be Veterinary Surgeon, on probation.

OBITUARY.

THE following deaths have been reported to the Registrar of the Royal College of Veterinary Surgeons during the last three

months by members of the profession resident in the localities where the deceased had been in practice:

Mr. John Ryding, M.R.C.V.S., late Prescott. Diploma dated 1813.

Mr. John Brown, M.R.C.V.S., late Doncaster. Diploma dated 1815.

Mr. Hugh Atherstone, M.R.C.V.S., late Derby. Diploma dated Jan. 18th, 1820.

Mr. William Price, M.R.C.V.S., late Newport Pagnell, Bucks. Diploma dated Dec. 14th, 1820.

Mr. Thomas Rawlinson, M.R.C.V.S., late Liverpool. Diploma dated April 16th, 1821.

Mr. Robert Collett, M.R.C.V.S., late Stafford. Diploma dated May 4th, 1821.

Mr. Benjamin Pilcher, M.R.C.V.S., late Ramsgate. Diploma dated Feb. 4th, 1826.

Mr. James Pennock, M.R.C.V.S., late York. Diploma dated Nov. 25th, 1830.

Mr. John French, M.R.C.V.S., late Chelmsford. Diploma dated July 12th, 1830.

Mr. George Wildsmith, M.R.C.V.S., late Burton-on-Trent. Diploma dated Jan. 6th, 1835.

Mr. John Martin, M.R.C.V.S., late Stratford, Essex. Diploma dated Aug. 18th, 1836.

Mr. John McLean, M.R.C.V.S., late Edinburgh. Diploma dated April, 1837.

Mr. Wm. Butler, M.R.C.V.S., late Buckland, Berks. Diploma dated May 9th, 1837.

Mr. John Powell, M.R.C.V.S., late Newport Pagnell, Bucks. Diploma dated Jan. 22nd, 1842.

Mr. Austin Cooper Shaw, M.R.C.V.S., late Hatfield. Diploma dated May 7th, 1843.

Mr. Geo. Sargisson, M.R.C.V.S., Bishop's Waltham. Diploma dated April 29th, 1846.

Mr. William Aitkin, M.R.C.V.S., late Edinburgh. Diploma April 25th, 1849.

Mr. Richard Leal Shaw, M.R.C.V.S., late Clapham. Diploma dated May 4th, 1861.

Mr. George Hain, M.R.C.V.S., late Thirsk. Diploma dated May 1st, 1862.

Mr. Edward Hire, M.R.C.V.S., late Penzance. Diploma dated April 29th, 1863.

Mr. Joseph Carlisle, Jun., M.R.C.V.S., late Carlisle. Diploma dated April 24th, 1866.

Mr. Geo. Thos. Baker, M.R.C.V.S., late Wrexham. Diploma dated April 24th, 1867.

Mr. Henry Fishwick, Gargrave, York, Dec. 13th, aged 54. Diploma dated May 22nd, 1846.



THE
VETERINARIAN.

VOL. LII.
No. 614.

FEBRUARY, 1879.

Fourth Series,
No. 290.

Communications and Cases.

REMARKS ON THE *FILARIA MEDENENSIS*, OR GUINEA WORM; ON THE OCCURRENCE OF THIS PARASITE ENDEMICALLY IN THE PROVINCE OF BAHIA; ON ITS ENTRANCE INTO THE HUMAN BODY BY DRINKING WATER.

By J. F. DA SILVA LIMA, M.D., Officiating Physician at the Hospital da Caridade, Bahia. Translated from the Portuguese by Dr. J. L. PATERSON, of Bahia, and communicated to Professor COBBOLD.

PART I.

So rarely, in the course of the last twenty years, have accidents arising from the presence of the *Guinea worm* been met with in this province, either in hospital or private practice, that it would appear that this well-known parasite, still very common in various tropical regions, is fast becoming extinct, or lingering on as a pathological curiosity. I know of no historical document determining with certainty at what period the worm first came under observation in Brazil, the name, however (*Bieto da Costa*), seeming to indicate its probable importation from the coast of Africa, and to point to the introduction of slavery into Brazil as the epoch of its first appearance, or, at all events, of its becoming more frequent or better known.

The African blacks, as is well known, during the time of the slave trade, suffered far more frequently from this nematoid than the rest of the population, and that, in many cases, so soon after their arrival in this country that it could

hardly be doubted they had brought it with them. In some of the older writers—coeval, however, still with the slave trade—who have either spoken of or described the diseases of Brazil, I find no mention of the *Guinea-worm* disease, or anything resembling it. Pison, for example, simply mentions the *dracunculus* to distinguish it from the *gigger*, and Luig Gomez Ferreira, a Portuguese surgeon, who practised for some time in Bahia, and still longer in Minas, in the first quarter of last century, and who, in his 'Erario Mineral,' describes many diseases peculiar to blacks, does not speak of or even allude to the *Guinea worm*, which must, nevertheless, have been very common in his time.

Among the writings of the present century, only in Sigaud's work on the 'Climate and Diseases of Brazil' are there related, very succinctly, six cases, observed either by himself or by others, and from which nothing can be gleaned towards a history of the *Filaria medinensis* in Brazil. Martins contents himself with speaking of this parasite as one of the many miseries affecting the blacks landing in Brazil. It is probable that there may exist, unknown to me, other documents bearing more directly on this subject; certain, however, it is that, with the exception of the slight article in Sigaud's work, I have been obliged to rely on my own very limited experience and on oral tradition for any information I have been able to collect in regard to the *Guinea worm* and its endemic origin in Brazil.

It being no intention of mine to write a history of the *dracunculus*, either in this province or in the Empire, but simply to endeavour to clear up some disputed points in the natural history of the worm, it will be sufficient for my purpose that it be granted as an established fact, and on the evidence of all the best known practitioners, that since the final cessation of the slave trade, long ago abolished by law, but till a comparatively late period carried on by toleration or clandestinely, it has been extremely rarely met with. For my own part, in a period of twenty-six years, I have observed it in only three cases. In one of them I extracted the worm from the foot of a Brazilian black, depositing the preparation in the Museum of the School of Medicine; the other two cases form, in a great measure, the subject matter of the present article. Now, tradition tells us that in former times the *Guinea worm* and the diseases arising from its presence in the system were very common, as is still further evidenced by Sigaud, who says that the *Guinea worm* "se rencontre souvent dans les diverses parties du corps des nègres, ayant un ou plusieurs mètres de développement."

From the frequency of the *dracunculus* among us during the time of the importation of slaves from the coast of Africa, from its extremely rare appearance since the final extinction of that trade, and the want of any evidence of its existence anterior to that barbarous traffic, we are warranted in drawing the conclusion that the parasite was brought from Africa along with the introduction thence of slavery.

The case I am about to relate proves alike the endemic existence of the *Guinea worm* in Brazil, as well as its introduction into the human body by the stomach, two facts still called in question by the great majority of helminthologists.*

I shall before concluding make some short reflections as to how far the present endemic existence of the *dracunculus* among us, definitely settled as that is by the following narrative, bears on the question, as to whether its original introduction among us be due exclusively to the importation of slaves from the coast of Africa.

(*To be continued.*)

ON PARASITES OF THE ASS.

By JOHN HENRY STEEL, M.R.C.V.S., Demonstrator of Anatomy at the Royal Veterinary College.

IN the following paper I have endeavoured to summarise results obtained from special and careful examination of 31 asses of various sexes, all advanced in years, during the months of November and October, 1878. These results may, I believe, be relied upon, as I exercised considerable care in examination of all these animals, and they were all used for dissecting purposes, and their organs therefore subjected to close scrutiny. In the constant state of work which supervision of a dissecting room necessitates, of course, I have been unable to make any microscopical investigations such as I might have desired to further elucidate my subject. This summary then deals only with that which has been seen with the naked eye and exposed by the scalpel in the ordinary investigation of the descriptive anatomy of structures; even thus limited I hope it has some value.

* Most of us consider that the question as to parasites' mode of access to the human body is at length definitively set at rest; but Dr. da Silva Lima's confirmatory evidence, deduced from observed facts, is none the less valuable on that account. The eminent Russian traveller, M. Fedtschenko, has clearly proved that the larvæ of the *Guinea worm* are swallowed after they have gained access to, and have developed within the bodies of freshwater entomostracous crustaceans of the genus *Cyclops*. Water containing these conspicuous animalcules is therefore dangerous to drink.—EDS.

Table of Parasites observed in Aged Asses used for Dissection at the Royal Veterinary College.

| No. | Date. | Sex. | Parasites observed. | Phase of Development. | Seat. | Noteworthy Pathological Appearances. | Remarks. |
|-----|----------|---------|-------------------------------|-----------------------|--------------------------|--|---------------------------------|
| 1 | 7th Oct. | Gelding | <i>Strongylus armatus</i> | Mature and immature | Colon | | |
| 2 | " | " | " | Immature | Ant. mesenteric artery | | |
| 3 | " | Mare | " | " | Colon and ant. mes. art. | — | Very few. |
| | | | " | " | Ant. mesenteric artery | | |
| | | | <i>Tænia perfoliata</i> | Mature | Cæcum | | |
| | | | <i>Echinococcus</i> | Small and calcified | Lung | | |
| | | | <i>Strongyl. tetracanthus</i> | Immature | Large intestine | Embedded in the mucous membrane | |
| 4 | " | Gelding | " | " | Colon and cæcum | " | |
| | | | <i>Fasciola hepatica</i> | Mature | Bile ducts | Ducts much thickened | Numerous. |
| | | | <i>Strongylus armatus</i> | Immature | Ant. mesenteric artery | | |
| 5 | 14th | " | <i>Cæstrus equi</i> | " | Stomach | — | Clipped and very well kept ass. |
| | | | No parasites detected | | | | |
| 6 | " | Mare | <i>Strongylus armatus</i> | " | Ant. mesenteric artery | | |
| 7 | " | Gelding | " | " | " | | |
| | | | <i>Tænia perfoliata</i> | Mature | Cæcum | | |
| 8 | " | Mare | <i>Strongylus armatus</i> | Immature | Ant. mesenteric artery | | |
| 9 | " | Gelding | " | " | " | | |
| | | | <i>Filaria papillosa</i> | Mature | Peritoneal sac | | |
| 10 | " | Mare | <i>Strongylus armatus</i> | Immature | Ant. mesenteric artery | | |
| 11 | 21st | " | <i>Ascaris megaloccephala</i> | Mature | Jejunum | | |
| | | | <i>Strongylus armatus</i> | Mature and immature | Large intestine | In pus containing cysts in mucous membrane | |
| | | | " | Immature | Ant. mesenteric artery | | |
| | | | <i>Strongylus micrurus</i> | Mature | Bronchi and trachea | | |
| 12 | " | " | <i>Strongylus armatus</i> | Immature | Ant. mesenteric artery | | |

| | 21st Oct. | Mare | Tænia perfoliata Echinoc. veterinorum Strongylus micrurus Strongylus armatus Tænia perfoliata Cæstrus equi | Mature Calcified Mature Immature Mature Very immature | Cæcum Liver Trachea and bronchi Ant. mesenteric artery Cæcum Stomach | Conical in figure, with red base and flesh- coloured remainder of body |
|----|-----------|----------|---|--|---|---|
| 13 | | | | | | |
| 14 | " | " | Strongylus armatus | Immature | Ant. mesenteric artery | A very fine specimen. |
| 15 | " | Stallion | " " | Mature | Peritoneal sac | |
| 16 | 28t | Gelding | Strongylus micrurus | Immature | Ant. mesenteric artery | |
| | | | Cystoids | Mature | Trachea and bronchi | |
| | | | Strongylus armatus | ? | Fat of abdominal walls | |
| | | | | Immature | Intestinal walls | Curled up in blood con- taining tumours |
| 17 | " | Mare | " " | " | Ant. mesenteric artery | — |
| | | | Tænia perfoliata | Mature | Cæcum | — |
| | | | Cystoids | ? | Fat of abdominal walls | A solitary specimen. |
| | | | Strongylus armatus | Immature | Ant. mesenteric artery | A few. |
| | | | " " | Mature and immature | Large intestine | |
| 18 | " | " | Strongy. tetraacanthus | Immature | Large intestinal walls | |
| | | | Cystoids | ? | Fat of abdominal walls | |
| | | | Strongylus armatus | Immature | Ant. mesenteric artery | |
| 19 | " | " | " " | " | " " | |
| 20 | 4th Nov. | " | " " | " | " " | |
| | | | " " | Mature | Colon | |
| | | | Fasciola hepatica | Immature | Walls of colon | In vascular tumours |
| | | | Tænia perfoliata | Mature | Liver | |
| | | | Strongylus micrurus | " | Cæcum | Almost disintegrated |
| 21 | " | " | Strongylus armatus | Immature | Trachea and bronchi | Very abundant |
| 22 | " | " | " " | " | Ant. mesenteric artery | |
| | | | " " | Mature | " " | |
| | | | | | Cæcum and colon | |

| No. | Date. | Sex. | Parasites observed. | Phase of Development. | Seat. | Noteworthy Pathological Appearances. | Remarks. |
|-----|----------|----------|--|--|---|---|--|
| 23 | 4th Nov. | Stallion | Echinoc. veterinorum Strongylus armatus | Small and calcified Immature | Liver Ant. mesenteric artery Colon and cæcum | Very few and embedded in mucous membrane | This worm requires identification. — <i>Eds.</i> |
| 24 | 11th | Mare | Strongy. tetracanthus Strongylus armatus " " Tænia perfoliata Cysticercoid nodule Tænia perfoliata Strongy. tetracanthus | Mature and immature Immature Mature and immature Mature Calcified Mature Mature and immature | Ant. mesenteric artery Large intestine Cæcum and colon Left lung Cæcum " | Conglomerate Larvæ embedded in mu- cous membrane | |
| 25 | " | Gelding | Strongylus armatus Spiroptera ? | Immature | Ant. mesenteric artery Cæcum and colon | In peculiar pus cysts | |
| 26 | " | Mare | Æstrus equi Tænia perfoliata Strongylus armatus | Immature Various ages and sizes Immature | Stomach Cæcum and colon Ant. mesenteric artery | A solitary specimen Considerable mesenteric disease | |
| 27 | " | Gelding | " " " " Cystoids Strongylus armatus | " Mature and immature ? Mature and immature Immature | " " In large intestine Fat of abdominal walls Colon Ant. mesenteric artery | Colic branches consider- ably diseased | |
| 28 | " | Mare | Tænia perfoliata Strongylus armatus " " Strongylus micrurus Strongylus armatus | Mature Immature " " Mature Immature | Cæcum Ant. mesenteric artery Trachea and bronchi Ant. mesenteric artery | | |
| 29 | 18th | Stallion | | | | | |
| 30 | " | Mare | | | | | |
| 31 | " | Gelding | | | | | |

Summary of the above Table.

| | |
|---|----|
| Total number of animals examined | 31 |
| <i>Strongylus armatus</i> in anterior mesenteric artery | 30 |
| „ „ in bowel cavity and walls | 10 |
| „ „ in peritoneal sac | 1 |
| <i>Strongylus tetracanthus</i> | 5 |
| <i>Strongylus mircurus</i> | 5 |
| <i>Spiroptera</i> ? | 1 |
| <i>Filaria papillosa</i> | 1 |
| <i>Ascaris megaloccephala</i> | 1 |
| <i>Tænia perfoliata</i> | 10 |
| <i>Echinococcus veterinorum</i> | 3 |
| [Cystoids and Cysticercoid nodule] | 5 |
| <i>Fasciola hepatica</i> | 2 |
| <i>Æstrus equi</i> | 3 |

Observations.—It will be noted that only one animal seemed entirely free from parasites, and, considering the little attention asses in general receive in the matters of food and shelter, we can hardly wonder at this result. The most frequent parasite by far is *Strongylus armatus*; for, while its presence in the anterior mesenteric artery is almost a foregone conclusion, its presence in a more mature condition in the bowel cavity is common. The case in which the parasite had attained its maturity in the peritoneal sac was interesting on account of the large size of the specimen. With regard to the morbid lesions produced by the presence of this species of Entozoon, in several cases not only the main anterior mesenteric trunk was affected, but we noted extensive disease of those branches which it sends to the double colon. The general condition of the walls of these vessels consisted in considerable thickening of their coats whereby tumours were formed between the layers of the mesocolon just against its attachment to the intestine. Also these indurated parts were permeated by small canals from which generally all parasites had escaped. These enlargements often contained caseous or well-matured pus, and occurred most frequently at the extreme portion of the colic arterial arch against the pelvic flexure of the bowel. In some few cases on examining the mucous membrane of the double colon the immature *Str. armatus* was discovered curled up beneath the mucous layer bathed in blood. The size of the parasites in this situation served to distinguish them from *Str. tetracanthus*, which parasite, it will be noted, was frequent, being generally present as a very minute curled-up worm, forming a black spot in the mucous membrane of the cœcum, not infrequently mistaken for a solitary gland. Such spots when present were generally extremely numerous. The more mature parasite might be

found as a small white worm lying on the mucous membrane or the surface of the intestinal contents (when these have been carefully separated from each other), or larger as a red worm pointed at each extremity in the same situations. The frequency of this parasite is, if anything, underrated, for there are often present small calcareous spots in the mucous membrane of the cæcum, which may be due to these, but which I have considered solitary glands in a state of calcareous degeneration.

It will be seen that I state the presence of Spiroptera in one subject, the parasites in this case occupied tumours of the mucous membrane of the returning portion of the double colon, and the appearance of these tumours differed markedly from those above mentioned, as produced by *Str. armatus* as being pus-bearing and somewhat chambered. The parasites were peculiar in figure, but I am open to correction in this matter. The *Filaria papillosa* from the peritoneal sac Dr. Cobbold was good enough to determine for me, and to him I am indebted for information as to the *Str. armatus* from the same situation. With regard to other nematodes the infrequency of *Ascaris megalcephala* is noteworthy as bearing on the source of this parasite, which is frequent in our well-housed and well-fed horses; but before making any deductions we require to confirm our observations. *Str. micrurus* occurs frequently, but we rarely note any marked morbid lesions consequent upon its presence, except excessively tenacious condition of the mucus of the membrane where the parasites are lying.

Representing the adult Tæniæ, we find *Tænia perfoliata* frequent in the cæcum and commencement of the colon, we observe it in one case in several stages of development; and we have several times, among the numerous Tæniæ found in a subject, considered that we had found a specimen of *T. plicata*, but such specimens being imperfect and immature, we have never been assured of the presence of the latter tapeworm. *Echinococci* small and calcified were observed in three subjects, in two occupying the liver, in one the lung. Once, too, we saw a conglomerate, calcified mass of small nodules, which looked like aggregated cysticerci in a calcified condition, but may have been composed of very small Echinococci or of calcified tubercles. Here we may note those *cystoid bodies of doubtful nature* to which I have drawn attention, and which lie in the fat between the peritoneum and the abdominal muscles. They occurred in four subjects.

Of Trematodes, *Fasciola hepatica* was comparatively rare, only two subjects containing specimens; these in each case

gave rise to the usual thickening of the walls of the bile ducts resulting in white patches on the surface of the liver and large cavities in its substance containing inspissated bile and numerous flukes.

Finally, *Æstri* were not numerous, and when present were generally very few and very small, and imperfectly developed.

The results of our inquiries hitherto have been largely influenced by the time of year, the prevalence of certain parasitic forms not being so marked as we should have inferred from previous crude observations. Much may be learned by future inquiry, and many corrections may be made. We regret that we are unable to follow up the history of the subjects, this being a point of considerable importance in our inquiry; but such information as we can obtain is meagre and imperfectly reliable. We must rest content then with a general idea of the treatment to which asses are subject, but the inquirer in this line cannot fail to remark that the cleanest and best kept asses are least frequently the hosts of parasites.

NOTES ON PECULIAR CYSTOID BODIES FOUND IN DISSECTING-ROOM SUBJECTS (ASSES).

By the Same.

Oct., 1878. Had my attention particularly directed to these bodies, which I had frequently seen before but neglected as being somewhat like lymphatic glands. They were numerous in a very fat subject and were in the thick layer of fat situated between the peritoneum and the transversalis abdominis, most of them so placed as to be visible through the serous membrane. They were embedded in the adipose tissue and some care was required to remove them entire. Generally a small mass of fat remained adherent to the surface. They consisted of a fairly stout outer wall and coagulated colloid contents of a brown colour, and varied in size from a lentil seed up to that of a small pea. The contents exhibited no connecting fibrous membrane, simply having the appearance of semi-coagulated fluid. A rough examination with the microscope showed many granules, fat cells, and granular corpuscles. In one specimen, I certainly saw imperfectly distinguishable (but present) radiating projections forming circlets. And I saw one dark body resembling in figure a detached hooklet, but I am by no means assured of

the nature of these (seen under $\frac{1}{2}$ -inch power), for the fatty matter obscured the field. Cells were also seen in some, and in one of them a burst coat, exposing the granular internal mass which had not become broken up, was observable. I found in one a body which might have been a crystal. I carefully examined the minor lymph glands of this animal, and found them *blackish* in colour and *solid*, being therefore, in both respects, markedly different from the cysts.

These recalled to my mind some specimens of calcified *small* cysts which occurred in abundance in the liver of an ass in the dissecting room some two years ago, of which I fortunately retain specimens. They are variable in size, one of them, which much exceeds the rest, being as big as an average green-pea. Also I have often observed and had my attention called by students to small, rounded, calcareous masses situated near the ribs on the outer surface of the external intercostals. These are of the average size of the above described cysts. I have not seen any this season yet.

I have examined the other asses placed fresh on the tables simultaneously with the subject from which the cysts were obtained, two out of the three were infested, but to a less degree than the first, the fourth presented no traces of anything of the kind.

Observations.—*Strongylus armatus* was found in the anterior mesenteric artery in each case. In the first I found one small Strongyle externally to the peritoneum but quite distinct from the cysts. Also a few specimens of the same parasite were found in the large intestine and a single specimen of *Tenia perfoliata*.

With the above evidence, I am in hope of being able to show that a distinct cystic parasite infests the ass, resembling in its size and general features the *Cysticercus cellulosæ*. The evidence is good, but the microscopic result hardly satisfactory, though not altogether discouraging, since the fatty and colloid masses obscure the field. I have carefully examined each cyst for evidence of a thickened portion corresponding to a head, but have not been successful, though in one specimen which I have preserved in spirit, I see a yellowish, opaque body projecting outwards from the wall like an extruded nucleus.

It is not unreasonable to suspect that some cystic parasites of the nature indicated affect animals so little cared for as asses. If these are not cysticerci I hope by investigation to be enlightened as to their anatomical nature.

[We had hoped to have illustrated this paper, but were prevented by unforeseen circumstances.—Eds.]

THE PRINCIPLES OF BOTANY.

By Professor JAMES BUCKMAN, F.G.S., F.L.S., &c. &c.

(Continued from p. 18.)

ASARALES.

THE ASARAL ALLIANCE introduces us to the last group of our series. It is remarkable for its small number of natural orders, as it possesses only three, as also for its paucity of both genera and species. At the same time several of the latter are of great interest, both in a botanical and economic point of view.

In the explanation of the alliance we copy the following from the author of the system we have followed :

“DIAGNOSIS.—*Epigynous exogens with monochlamydeous flowers, and a small embryo lying in a large quantity of albumen.*

“The place which Birthworts should occupy in a natural arrangement is one of those disputed points respecting which it is extremely difficult to arrive at any positive conclusion. They are so anomalous in their woody structure, and so peculiar in their trimerous flowers, with an inferior ovary abounding in ovules, that an obvious ally can hardly be found for them. In fact they seem to be of an intermediate nature between exogens and endogens or dictyogens

“The great livid calyx of *Aristolochia* calls to mind the spathes of *Arads*; the leaves are those of *Sarsaparillas*. It is therefore probable that they should be regarded as a group standing on the borders of the three subclasses just mentioned, and joining them to each other, just as Switzerland join Austria, Italy, and France.

“The points of resemblance between Birthworts, Sandalworts, and Loranths are their want of corolla, their inferior ovary, their large albumen, and small embryo. These appear to be circumstances of greater weight than any distinctions that might be found between them. The rim which appears at the summit of the ovary of *Aristolochia* is possibly of the same nature as that of Loranths.

“It is not to be wondered at that here, amidst orders which, although apparently at the uttermost boundary of the vegetable kingdom, are really points of communica-

tion, by means of which the circles of affinity return into themselves.

“We should find other tendencies than that of Birthworts to assume the condition of natural orders stationed in a lineal arrangement at very distant parts of the line. In truth Sandalworts stand, with respect to the Garryal alliance, and Loranths to Amentals, in the same position as New Holland to New Zealand, or Kamschatka to Russian America upon the maps; the whole world seems to divide them, and yet they are stationed within a few degrees of each other.

“Thus Loranths, which are often unisexual, approach Oleasters somewhat nearly, and Sandalworts come close up to the limits of Helwingiads.”*

The three natural orders of Asarals have been distinguished as follows:

1. SANTALACEÆ.

SANDALWORTS.—*Ovary 1-celled; ovules definite, with a coated nucleus.*

2. LORANTHACEÆ.

LORANTHS.—*Ovary 1 celled; ovules definite, with a naked nucleus.*

3. ARISTOLOCHIACEÆ.

BIRTHWORTS.—*Ovary 3- to 6-celled; ovules 00.*

Of these we describe the first and the last orders here, reserving the Loranths for a separate article.

1. The *Santalaceæ* or *Sandalworts* contain 18 genera, which are again referred to 110 species, those of North America and Europe, including our only native species of *Thesium linophyllum*—bastard Toad-flax—presenting us with more or less inconspicuous weeds, while those of New Holland, the East Indies, and the South Sea Islands are large shrubs or small trees.

The *Thesium linophyllum* of Smith's ‘English Botany,’ *T. humifusum* of De Candolle, is a somewhat rare British plant, which is occasionally found on old exposed grassy slopes, on Limestones or Chalks, more or less confined to the south of England. We have gathered it at Hartley Bottom, on the top of Leckhampton Hill, where we once had the pleasure of seeing a clever botanist, who had disputed the locality, walk over the plant without recognising it, a mistake easily accounted for, as at first sight it is so much like the

* ‘Vegetable Kingdom,’ p. 786.

Linum catharticum, so common to the same district. Alas ! our own vision is not so perfect as it was then, some thirty years since ; yet we should not expect difficulty now in finding our obscure but interesting friend about July or August.

The plant was at one time esteemed as an astringent medicine, thus possessing some of the principles of the Sandalwood and Kino, which belong to the woody section of the order. These opinions, however, are expressed with caution, as even Pereira was in great doubt as to the speics, or even families, that produced these medicines.

3. The *Aristolochiaceæ*, or Birthworts, number 8 genera and 130 species. Several of these are common in the equinoctial parts of South America, and rare in other countries ; found sparingly in North America, Europe, and Siberia ; more frequently in the basin of the Mediterranean ; and in small numbers in India.

The plants belonging to the order present such variations that it is, indeed, difficult to assign them with certainty to their present position ; they are mostly herbaceous, and the two forms, rarely met with in our own country in a doubtfully wild position, may be referred to as affording good examples of their order ; these are—

Asarum Europæum.—*Asarabacca* is, as stated by Mr. Syme, very rare, perhaps not truly native, at least in many of its stations, though it is probably so near Salisbury, Wilts, Halifax, and near Settle, Yorkshire ; Burnley, Lancashire ; and Westmoreland. We have never gathered it in a wild habitat, though we have met with it in old-fashioned gardens, as it was at one time held in great repute, even by learned physicians, though it now has no place in the Pharmacopœia. Perhaps its only use at present is as an errhine, as it is said to be the basis of most of the cephalic snuffs.

4. *Aristolochia clematitis*, Birthwort, from the following, was once a herb of great repute :

“The name of the common Birthwort, and its supposed remedial powers, are the suggestions of the doctrine of signatures, by the shape of the corolla.

“The root is aromatic and bitter, but not ungrateful to the palate.

“It has been used in the Portland powder for the cure of gout, but not without producing effects more formidable than the original disease. The ancients attributed great virtues to it. Gerarde tells us that it is a singular and much-used antidote against the bite of the rattlesnake, or rather adder or viper, whose bite is very deadly, and therefore, by the

providence of the Creator, ‘ Hee hath upon his taile a skinny, dry substance, parted into eels, which contain some loose, dry, hard bodies, that rattle in them (as if one should put little stones or pease into a stiffe and very dry bladder), that so he may by this noise give warning of his approach, the better to be avoided ; but if any be bitten, they know not stand in need of no better antidote than this root, which they chew and apply to the wound, and also swallow some of it downe, by which means they quickly overcome the malignitie of this poisonous bite, which otherwise would in a very short time prove deadly. Many also commend the use of this against the plague, smallpox, measles, and such like maligne and contagious diseases.’

“ An opinion is said to prevail in France that the produce of vineyards in which this plant abounds becomes deteriorated in quality.”*

The claim of the Birthwort as a native plant rests upon still more slender grounds than the Asarabacca. Syme tells us that it is found “ among old ruins. Rare, and not indigenous, confined to the south and east of England. I have seen specimens only from Lakenham.”†

Like the preceding, this plant is sometimes met with in old-fashioned gardens, as it was at one time held in great repute, though now it is only looked upon as a curiosity.

Lindley, in his ‘ Flora Medica,’ refers to no less than fourteen species, or supposed species, which have been employed in medicine, and that most of them really contain active principles cannot possibly be doubted ; but we find the name of Birthwort given to some forms on account of the peculiar structure of the corolla, or *A. serpentaria*, from its peculiarly twisted roots, a signature, which pointed it out to our forefathers as a specific for snake-bites ; we do not wonder that a reputation gained upon so unreasonable a principle as the doctrine of signatures should, in more enlightened times, fail to command respect, and all the more so in a case where a reputation founded in ignorance was at one time certain to take a stronger hold upon the public mind.

* ‘ English Botany,’ vol. viii, p. 92.

† Ibid., vol. viii, p. 91.

“DYER’S VESICANT.”

Letter from Professor WALLEY, Principal of the Edinburgh
Veterinary College.

EDINBURGH;

January 15th, 1879.

GENTLEMEN,—I suppose few of my professional brethren who have read the communications which have recently appeared in the *Veterinarian*, from the pen of Mr. Dyer, have finished their perusal without a feeling of regret and, to some extent, degradation taking possession of their minds; at least, such has been the case with myself. That there are men in our profession who for the sake of gain will condescend to the lowest practices, and who reckon not of the agony and suffering inflicted on the brute creation so long as they can accomplish their selfish purposes is undeniable; but the wisdom of exposing the gaping and festering wounds under which our noble profession groans to the gaze of interested and unscrupulous critics is questionable.

There are other and more constitutional methods of bringing the mal-conduct of its members before the profession than these.

Into the question of the value of firing as a remedial agent I do not intend to enter further than to express the opinion based on a long acquaintance with its effects—that no remedy which the veterinary surgeon possesses is so powerful for the relief of suffering, when properly and judiciously employed, as the actual cautery. In the sister profession this truth is beginning to be fully recognised, as proved by the fact of a very extended use of the cautery by many surgeons within the last two or three years. That any question as to the use of chloroform—where horses are cast either when firing or any other severe operation is to be performed,—should have arisen in the present day has more than astonished me.

I should not, directly, have taken any notice of this matter had not a copy of the *Irish Sportsman* been forwarded to me a few days ago containing the enclosed advertisement in reference to—“Dyer’s Vesicant”—“Firing done away with”—which you can publish with this letter or not, and as to the signification of which I leave my professional brethren to form their own opinion.

I am, &c.

To the Editors of the ‘Veterinarian.’

“DYER’S VESICANT.”

FIRING DONE AWAY WITH.

“Sharavogue, Roscrea, October 4th, 1877.

“DEAR SIR,—Please send me half-a-dozen more bottles of your Vesicant. I find it very useful in coughs and colds.—

Yours, &c.,

“HUNTINGDON.”

D. B. Franks, R.M., Esq., Gort Colonel Bushe, P. Coffey, and J. Kelly, Esqrs.; Captains Hugo and Benthall; Messrs. Lalor and Stewart, and scores of others, declare this to be the best thing yet known for CURBS, SPLENTS, SPAVINS, and other diseases requiring blistering; never blemishes, and horses may continue work. Worth from a pound to five pounds in some cases. Ample directions on the bottles. Price 5s., or 5s. 3d. free per post, in stamps or P.O.O.

To be had of W. STERLING, Pharmaceutical Hall, Kilkenny; LAIRD and Co., and R. H. DYER, M.R.C.V.S., Limerick.

Sold by M'Master and Co., Abbey-street, Dublin, Sole Agents.

SPINDLE-CELLED SARCOMA BLOCKING THE INTESTINES.

By JOHN CUTHBERT, F.R.C.V.S., Leeds.

I HAVE to day, January 4th, forwarded you per rail a tumour such as I never met with before. I think it may be of interest to you and to the readers of the *Veterinarian*. It was situated in the double colon, and produced almost perfect occlusion of that intestine.

The subject was an aged cart horse which had been suffering from obstruction of the bowels for twelve days. On January 3rd a sudden change took place, and death ensued in a few hours, the result of rupture of the colon.

Report on the Specimen by Professor Axe.

The growth referred to was connected with the intestinal wall by a short peduncle, and had its origin in the sub-mucous tissue. It was rounded in form and exhibited a dark, rough, hard, and more or less nodulated surface. In transverse diameter it measured six inches. It was soft in consistence, and on section exhibited a pinkish-red hue. Scattered through it were a number of cysts, varying in size from that of a

hemp seed to that of a hazel nut, and here and there were firm, dark coagula. The cysts contained a thin, pale, straw-coloured fluid and presented on their interior a smooth shining surface, not unlike a serous membrane. The superficial zone of the tumour presented a bluish-black appearance, and on section imparted to the hand a gritty sensation, but no such resistance was felt in the other portion of the growth.

The central portion of the growth was chiefly made up of decolourised fibrine, being the remains of coagula.

Microscopically examined it was found in great part, to consist of spindle-shaped cells, and in a less degree of round, colourless elements. The spindle-shaped cells had undergone more or less colloid degeneration, and in numerous instances were completely broken up. Free colloid matter was also found in irregular masses scattered through the field, as well as numerous calcified corpuscles.

The specimen belongs to that class of growths known as connective-tissue formations, a type of tumour not uncommonly found in the situation named, and also to greater or less extent in almost every other part of the body.

DETECTION OF TRACES OF PRUSSIC ACID.

By CHARLES SHEATHER, M.R.C.V.S., London.

MY attention was attracted to this subject on finding, in the January number of the *Veterinarian*, the same test introduced twice, viz., on page 28 and again on page 45. The mistake of publishing it twice can be easily understood; it was drawn from two sources; the authorities in each paragraph are given. In the one the test is quoted directly from the 'Polytechnisches Notizblatt,' in the other from the 'Chemist and Druggist,' which, however, in the body of the paragraph, acknowledges the original source. The paragraph on page 45 commences, "Böttger has devised a lecture experiment, &c." This seems to imply that the experiment is original; but, however, if the fourth edition of 'Chemistry; General, Medical, and Pharmaceutical,' by Professor Atfield, be consulted (page 282), there will be found a test differing but very little (excepting the strength of the solution of sulphate of copper employed) from Böttger's experiment; it is designated "Schönbein's Test;"

it may have appeared in former editions of the work, the fourth edition being published in 1872.

At my first examination I gave, amongst others, this test, mentioned in Attfield's work, for Prussic acid; the question next came as to its source, was I taught it at the school at which I was educated? My reply was that I had *read* it, and that I had not tried it. My examiner requested me to try the test afterwards, and added that I should probably find the solution of sulphate of copper acted equally well without the alcoholic solution of guaiacum, and was of little value as a test. I cannot say either one way or the other, as I have not tried the test.

PARTURIENT APOPLEXY.

By GEORGE BOURDASS, M.R.C.V.S., Bridlington.

My late father, having had an extensive cattle practice in this neighbourhood, was considered a great authority in cases of milk fever, as the disease is commonly called here. His chief remedy in these cases consisted of aromatic spirits of ammonia, turpentine, and cinchona, in doses of an ounce each, and as a preventive he was accustomed to bleed cows six or eight days before calving, and administer a dose of alum; but what effect, if any, the alum had I cannot say.

I also have had considerable experience in the disease, and have adopted the following method as a preventive with good success, viz. giving a saline purgative six or eight days before calving, and another saline purgative immediately after calving, with an ounce of cinchona; and twelve hours after calving the following, viz. Pulv. Cinchonæ, Anisi, Pulv. Gentian, *ana* ʒj, Ammon. Carb. ʒij, in oatmeal gruel. Whenever this treatment has been adopted it has been successful, but when my clients have neglected to carry it out I have had a great many cases of parturient apoplexy.

In this part of the county we are greatly adding to our number of cows, and feeding them high on account of the increased value of milk and butter and young cattle, our wholesale dealers selling milk 1s. per gallon, retail 1s. 4d. These cows are fed on turnips, linseed cake, crushed oats, &c.

The last few years, when I have been called to a cow suffering from milk fever the case, as a rule, has run its course in a very short time; indeed, in many instances, the animals have died in from six to eight hours, and often in in less time than that. When I have had a distance of five

or six miles to travel to see the animals they have, as a rule, been dead or in a dying state, and no treatment seemed to be of any benefit.

The disease appears to me to run its course much quicker now than it did when, as a boy, I accompanied my father to attend the cases. Whether this arises from high feeding or other causes I cannot say. I know it to be a fact, however, that nowadays, when the disease has become fully established, you have a very poor chance of saving the animal. Hence the only thing we can do is to prevent the disease if possible.

The reasons advanced by Mr. Prudames with respect to his preventive measures, viz. that "the only objections that I have observed are that occasionally parturition is hastened, and sometimes the quantity of milk also for the first few days is lessened," are the very reasons which led me to give up the withdrawal of blood.

With my preventive treatment my clients one and all are satisfied, and say the medicines are worth the expense in the increase of milk during the first few weeks, even if they had had no fear of parturient apoplexy. I have them sent long distances out of my district, and have not heard yet of one failure.

I consider the saline purgative acting on the bowels lessens the depression on the nervous force, and that the cinchona on the mammary gland at once increases the flow of milk, and so diminishes the depression of the nervous force.

I have at different periods of the year given to my own cows an ounce of cinchona in oatmeal gruel once a day, to see what effect it had on the secretion of milk, and have always found an increase of it from one to three pints in the twenty-four hours, or, when continued for a week, an increase of eight to twelve pints during the week.

PARTURIENT APOPLEXY.

By S. NEWMAN, M.R.C.V.S., Havant, Hants.

I HAVE read with interest the remarks on the above disease by Mr. Santy and Mr. Prudames. For some time past I have carried out the same kind of treatment which they recommend, viz. bleeding and purging shortly before calving, but with only the varied success. This has also been the case with all other preventive measures which I have adopted.

I will not now venture to describe the pathology of the

disease, but content myself by saying that a somewhat lengthened experience has shown that the best preventive means have been to keep the cows on a moderate quantity of dry food for two or three months prior to calving.

REMARKS ON PARTURIENT APOPLEXY.

By STEPHEN BEESON, Sen., M.R.C.V.S., Chalfont, St. Peter's.

As you kindly invite the attention of your readers and the profession generally to the subject of preventive treatment of parturient apoplexy, I willingly join in giving my experience of the treatment which I have adopted for upwards of fourteen years. And I cannot do it in a better way than by relating that treatment in four cows belonging to T. W—, Esq.

This gentleman lived in our neighbourhood twenty-eight years, and I had the management of the cows during the whole of the time.

For the first fourteen years there were twenty-six calvings, and out of that number we had eleven cases of parturient apoplexy; four died, and seven recovered. Of course I felt very much concerned about the animals, and always left the premises, when one died, very dissatisfied with myself.

The thought struck me whether the withdrawal of blood before calving might not prove beneficial. Accordingly I mentioned it to the owner. His reply was, "Do as you please."

The next cow that was due for calving I bled a few days before she calved, all went on well (of course I gave the usual medicines at such times). This induced me to continue the same treatment, and for the space of fourteen years I have not lost one cow on this estate from dropping after calving, as it is commonly called.

In the fourteen years we had forty-one calvings, and out of that number, four had slight symptoms of dropping; none of them died. Just to show how harmless the bleeding is to the cow, I find one was bled every time before calving for nine successive times, another eight times. In fact every cow was bled before calving after the second calf, the animals always being kept in a very plethoric state and giving a large quantity of milk.

I have watched all the cases very narrowly, and can see no objection to its general use; the quantity of milk is lessened for a fortnight or three weeks. But I have always found great difficulty in drying the cow afterwards.

Venesection having gone out of practice, it is very difficult to get one's employer's consent, seemingly rather he would lose the animal than that she should be bled.

In a pecuniary point of view I believe there is more money lost to the country through this disease than all others to which cattle are subject to, besides the loss of our most valuable stock.

I have tried all other means, such as keeping the animal short of food, compelling her to take plenty of exercise, milking her up to the time of calving, giving medicine, &c.; but have found no remedy so safe and certain as bleeding.

CASE OF POISONING WITH YEW.

By F. W. DAY, M.R.C.V.S., Tewkesbury.

ON Friday, January 3rd, I was requested by a client of mine to go at once and make a *post-mortem* examination of a very valuable brood mare, seven years old, in foal to the best agricultural horse in the district, which on the previous morning had been found dead in the field where she had been turned to grass with five other horses for some five or six weeks. I attended as early as I could, and on arriving at the field found the animal above described lying on the off side, the abdomen being swollen to an enormous extent from the distension of the intestines with gas. She had been partly skinned prior to my arrival, so that I could not make any notes of the external appearances beyond what I have described. On laying open the abdomen the large intestines quickly protruded, and on examining them I perceived about the middle of the double colon, a large sac formed by the peritoneum, the inner coats of the intestines having been ruptured. The surrounding structures were intensely inflamed. I at once called my client's attention to this condition of the intestines, and told him that in all probability the animal's death was produced by the rupture. He seemed quite satisfied, and made several suggestions as to what had led to the lesion. Could it have arisen from a kick or blow from one of the other horses? he asked. I said I thought not, as there was no bruise what-

ever in the wall of the abdomen. The field being on a hill, he then suggested that the mare might have been galloping about and fell into one of the numerous hollows in the field. After a few moment's discussion I proceeded with my examination and found that the stomach was intensely inflamed, and the duodenum also throughout its whole course. I also noticed that the jejunum and ileum were likewise inflamed in large patches.

The cœcum did not appear unhealthy, but its contents were of a very dark colour, and chiefly fluid, and on following the course of the intestines I came to that portion of the double colon in close proximity to the rupture above described. I cut into the sac and gave exit to ingesta of a very dark colour.

The kidneys appeared healthy, except a little discoloration of the right one, which, I am of opinion, was a *post-mortem* stain, as the animal had lain on the off side, and the blood had doubtlessly gravitated.

The liver was somewhat congested, but no change of structure had taken place.

The thoracic viscera were also healthy.

The uterus contained a fine female foetus, on which the hair was just making its appearance at the two extremities, viz. around the mouth and on the extreme end of the tail.

Having now had a good look at the viscera of the abdomen I determined to examine the contents of the stomach, and had it severed from the intestines and removed to a convenient spot for the purpose. It contained about half a peck of ingesta, which I found on close examination to be composed mostly of half-masticated yew sprigs and leaves, a fair sample of which I have enclosed in a small box and shall forward it to you herewith. I now began to reflect on what would be the evidences of poisoning by yew in the horse. I had seen cases of the kind in cattle, but not in the horse. I did not think that yew was so likely to poison horses as cattle, knowing that sheep and deer often eat it, and suffer apparently no inconvenience. I called my client's attention to the fact of the yew being in the stomach, and he declared that the animal had not been out of the field for weeks. I, nevertheless, began to think that the yew was at the bottom of all the mischief, so I put a portion of the contents of the stomach into an old envelope which I happened to have in my pocket, and started to try and discover where the animal could have obtained the yew. I soon found in a plantation on the far side of the

field several large yew trees standing, the branches of which overhung the wall-fence far enough to be within the reach of both cattle and horses. On further examination I observed that considerable quantities had been eaten by the horses. This was also proved by the tracts to and from the spot, which could not be mistaken, as there was from one to two inches of snow on the ground at the time. Notwithstanding all these facts, I cannot clearly understand why eating of yew should kill one animal and not apparently injure others; nor how it gave rise to the rupture of the bowel. Probably the mare being far advanced in pregnancy had much to do with the general morbid condition of the abdominal viscera. As a precautionary measure the other animals were removed to another field.

[The box sent by Mr. Day contained scarcely anything else but half-masticated yew.

This case differs in no essential particulars from many others of yew poisoning. We have known again and again both horses and cattle to die very quickly after partaking of the plant, and others of the same herd not to be affected. Indeed, this would almost appear to be the rule with regard to the effects of yew.

With an animal in foal and the intestines distended with gaseous matter, partly due to the green yew undergoing fermentation, the rupture of the bowel is not difficult to account for.]—EDS.

Pathological Contributions.

CATTLE PLAGUE.

ACCORDING to information lately received it appears that cattle plague still prevails in many of the Governments bordering Austria and Germany, and those adjoining the Black and Baltic Seas, namely, Bessarabia, Volhynia, Ekaterinoslav, Podolia, Taurida, Kherson, and St. Petersburg.

The cattle plague in Germany, though diminishing or becoming extinct in some places, is, however, spreading in other localities. No new cases are said to have occurred in the Governments of Potsdam and Merseburg since the 27th of December last; but outbreaks of the disease have been officially reported in the Government of Frankfort-on-the-Oder. In the places which have already been reported as infected, one more farm-yard in the Government of Gumbinnen, and twelve more farm-yards in the Government

of Frankfort-on-the-Oder, have been attacked anew by the plague.

The number of animals which have perished or been slaughtered owing to the plague since its first appearance amounts, according to present advices, to 198 head of cattle in the Government of Gumbinnen; to 1419 cattle, 1013 sheep, and 237 goats, in the Government of Frankfort-on-the-Oder; to 137 cattle, 12 sheep, and 1 goat, in the Government of Potsdam; and 8 cattle in the Government of Merseburg.

The latest intelligence states that the cattle plague has not spread in the district of Gumbinnen. It has broken out at Gartois, near Ost Sternberg, district Frankfort-on-the-Oder, and at Hartmannsdorf, near Schivlivitz, district Merseburg. On the 6th January the plague appeared in seven more farms in the district of Frankfort, already declared infected, and in one near Potsdam.

Eight villages in district of Frankfort-on-the-Oder, and Blumberg in Potsdam district, are, on the other hand, declared free from the cattle plague.

The last official report of 28th December relating to cattle plague in Austria-Hungary states that the plague exists in six villages, district of Macarsea, in Dalmatia, in three villages in district Sing, and in eight villages in district of Cattaro, all in Dalmatia, and in seven other villages of the same Government. Also in two places in Galicia, and in two districts of Hungary; and in three villages in the Military Frontier, and in three communes in Bosnia.

THE CONTAGIOUS DISEASES (ANIMALS) ACT, 1869.

RETURN of the Number of Foreign Animals brought by Sea to Ports in Great Britain, which on inspection on landing, within the month of December, 1878, have been found to be affected with any Contagious or Infectious Disease, specifying the Disease, and the Ports from which, and to which, such Animals were brought, and the mode in which such Animals have been disposed of:

Also, whether the Foreign Ports from which the Animals are brought are in Scheduled or Unscheduled Countries, and the Number of Healthy Animals brought in the same Vessels with the Diseased Animals, and the mode in which such Healthy Animals have been disposed of, whether by slaughter or otherwise :—

SCHEDULED COUNTRIES.

| Ports in Scheduled Countries from which brought. | | | Ports in Great Britain to which brought. | Disease. | DISEASED ANIMALS. | | | | | HEALTHY ANIMALS.* | | | | | | |
|--|--------|----------------|--|----------|-----------------------------|--------|--------|--|--------|-------------------|--|-----|-------|--|------|-----------|
| | | | | | Number of Diseased Animals. | | | | | Disposal. | Number of Healthy Animals brought in the same Vessels with Diseased Animals. | | | | | |
| | | | | | | | | | | | | | | | | Disposal. |
| Cattle. | Sheep. | Goats. | Swine. | Total. | Cattle. | Sheep. | Goats. | Swine. | Total. | Disposal. | | | | | | |
| Amsterdam | London | Foot-and-mouth | ... | 32 | ... | ... | 32 | { Slaughtered under the instructions of the Privy Council. | 38 | 5969 | ... | ... | 6007 | { Slaughtered under the instructions of the Privy Council. | | |
| Bremen | " | Sheep-scab | ... | 92 | ... | ... | 92 | | ... | 2167 | ... | ... | 2167 | | | |
| Hamburg | " | Foot-and-mouth | ... | 3 | ... | ... | 3 | | Ditto | ... | 1000 | ... | ... | | 1000 | Ditto |
| Harlingen | " | " | ... | 6 | ... | ... | 6 | | Ditto | ... | 403 | ... | ... | | 403 | Ditto |
| Rotterdam | " | " | 2 | 32 | ... | ... | 34 | | Ditto | 522 | 4785 | ... | 10 | | 5317 | Ditto |
| Total Diseased Animals. { | | | 2 | 73 | ... | ... | 75 | Total Healthy Animals . | 560 | 14324 | ... | 10 | 14894 | | | |
| Total | | | 2 | 165 | ... | ... | 167 | | | | | | | | | |

* 'Healthy Animals' means Animals which were not found to be diseased on inspection on landing.

UNSCHEDULED COUNTRIES.

No case of contagious or infectious disease has been detected in animals brought to this Country from Unscheduled Countries during the Month of December, 1878.

Veterinary Department, Privy Council Office,
January 9th, 1879.

RETURN of the Number of Places in Great Britain upon which contagious or infectious disease (except sheep-scab) has been reported to have existed during the week ended January 4th, 1879, with particulars related thereto.

PLEURO-PNEUMONIA.

| | Farms or other Places. | | | Cattle Attacked. | | Diseased Cattle. | | | | Cases which existed in previous Weeks not reported until this Week. | |
|---|--|---|---|--|---------------------------|------------------|-------|------------|------------|---|------------------|
| | Number reported upon this Week which have been previously reported upon. | Number upon which Fresh Outbreaks have been reported to have taken place during the Week. | Total Number reported upon during the Week. | Remaining diseased from the previous Week. | Attacked during the Week. | Killed. | Died. | Recovered. | Remaining. | Fresh Outbreaks. | Cattle Attacked. |
| ENGLAND. COUNTY.* | | | | | | | | | | | |
| Chester | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. |
| Cumberland | 4 | 1 | 5 | .. | 2 | 2 | .. | .. | .. | .. | .. |
| Derby | 1 | .. | 1 | .. | 1 | 1 | .. | .. | .. | .. | .. |
| Durham | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. |
| Essex | 10 | 2 | 12 | .. | 3 | 3 | .. | .. | .. | .. | .. |
| Hertford | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. |
| Huntingdon | 2 | 1 | 3 | .. | 1 | .. | .. | .. | 1 | .. | .. |
| Kent (ex. Metropolis) | 7 | 1 | 8 | 1 | 5 | 5 | .. | .. | 1 | 1 | 1 |
| Lancaster | 11 | 1 | 12 | 1 | 8 | 9 | .. | .. | .. | .. | .. |
| Leicester | 4 | .. | 4 | .. | .. | .. | .. | .. | .. | .. | .. |
| Lincoln, Parts of Holland | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. |
| " Parts of Lindsey | 2 | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. |
| Middlesex (ex. Metropolis) | 5 | .. | 5 | 1 | 3 | 4 | .. | .. | .. | .. | .. |
| Norfolk | 4 | 2 | 6 | 1 | 2 | 3 | .. | .. | .. | 1 | 2 |
| Northampton (ex. Soke of Peterborough). | 4 | .. | 4 | 2 | .. | .. | 2 | .. | .. | .. | .. |
| Notts | 1 | .. | 1 | .. | 1 | 1 | .. | .. | .. | .. | .. |

| ENGLAND. | | | | | | | | | | | | |
|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| COUNTY* (continued). | 2 | ... | 2 | 141 | 9 | 66 | 70 | 2 | ... | 3 | 3 | 4 |
| Salop | 2 | ... | 2 | 1 | ... | ... | 1 | ... | ... | ... | ... | ... |
| Stafford | 1 | ... | 2 | 1 | ... | ... | 3 | ... | ... | ... | ... | ... |
| Suffolk | 5 | ... | 1 | 7 | ... | ... | 6 | ... | ... | ... | ... | ... |
| Surrey (ex. Metropolis) | 2 | ... | ... | 3 | ... | ... | ... | ... | ... | ... | ... | ... |
| Sussex | 1 | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Warwick | 2 | ... | ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... |
| York, East Riding . . | 3 | ... | 1 | 4 | ... | ... | 3 | ... | ... | ... | ... | ... |
| " North Riding . . | 1 | ... | ... | 1 | ... | ... | 1 | ... | ... | ... | ... | ... |
| " West Riding . . | 7 | 4 | ... | 11 | 2 | 4 | 6 | ... | ... | ... | ... | ... |
| The Metropolis . . . | 4 | 3 | 7 | 9 | ... | 9 | 9 | ... | ... | ... | ... | ... |
| SCOTLAND. | | | | | | | | | | | | |
| COUNTY*. | 119 | 22 | 141 | 9 | 66 | 70 | 2 | ... | 3 | 3 | 4 | |
| Aberdeen | 1 | ... | 1 | ... | 1 | ... | ... | ... | ... | 1 | ... | ... |
| Argyll | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Clackmannan | 1 | ... | 1 | ... | ... | 2 | ... | ... | ... | ... | ... | ... |
| Edinburgh | 11 | 2 | 13 | ... | 4 | 4 | ... | ... | ... | ... | ... | ... |
| Fife | 5 | 1 | 6 | ... | 2 | 2 | ... | ... | ... | ... | ... | ... |
| Forfar | 2 | ... | 2 | ... | 1 | 1 | ... | ... | ... | ... | ... | ... |
| Kinross | 2 | ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Kirkcudbright . . . | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Peebles | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Perth | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Renfrew | 3 | ... | 3 | ... | ... | 4 | ... | ... | ... | ... | ... | ... |
| Roxburgh | 2 | ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Stirling | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| TOTAL | 119 | 22 | 141 | 9 | 66 | 70 | 2 | ... | 3 | 3 | 4 | |

FOOT-AND-MOUTH DISEASE.

| | Farms or other Places. | | | Animals Attacked. | | Diseased Animals. | | | | Cases which existed in previous Weeks not reported until this Week. | |
|----------------------|--|---|---|--|---------------------------|-------------------|-------|------------|------------|---|-------------------|
| | Number reported upon this Week which have been previously reported upon. | Number upon which Fresh Outbreaks have been reported to have taken place during the Week. | Total Number reported upon during the Week. | Remaining diseased from the previous Week. | Attacked during the Week. | Killed. | Died. | Recovered. | Remaining. | Fresh Outbreaks. | Animals Attacked. |
| ENGLAND. County.* | | | | | | | | | | | |
| | 1 | ... | 1 | 3 | ... | ... | ... | ... | 3 | ... | ... |
| | ... | 1 | 1 | ... | 80 | ... | 2 | ... | 78 | ... | ... |
| TOTAL | 1 | 1 | 2 | 3 | 80 | ... | 2 | ... | 81 | ... | ... |

FARCY.

| | Horses attacked. | | | Diseased horses. | | | | Horses attacked. | |
|-------------------------------|--|---|---|--|---------------------------|---------|-------|------------------|------------|
| | Number reported upon this Week which have been previously reported upon. | Number upon which Fresh Outbreaks have been reported to have taken place during the Week. | Total Number reported upon during the Week. | Remaining diseased from the previous Week. | Attacked during the Week. | Killed. | Died. | Recovered. | Remaining. |
| ENGLAND. County.* | | | | | | | | | |
| | 1 | ... | 1 | 1 | ... | ... | ... | ... | 1 |
| | ... | 1 | 1 | ... | 1 | ... | ... | ... | 1 |
| Huntingdon | 1 | ... | 1 | 1 | ... | ... | ... | ... | 1 |
| Kent (ex. Metropolis) | ... | 1 | 1 | ... | 1 | ... | ... | ... | 1 |
| The Metropolis | 1 | 3 | 4 | 4 | 3 | 3 | ... | ... | 4 |
| TOTAL | 2 | 4 | 6 | 5 | 4 | 3 | ... | ... | 6 |

GLANDERS.

| | Farms or other Places. | | | Horses Attacked. | | Diseased Horses. | | | | Cases which existed in previous Weeks not reported until this Week. | |
|--------------------------------------|--|---|---|--|---------------------------|------------------|-------|------------|------------|---|------------------|
| | Number reported upon this Week which have been previously reported upon. | Number upon which Fresh Outbreaks have been reported to have taken place during the Week. | Total Number reported upon during the Week. | Remaining diseased from the previous Week. | Attacked during the Week. | Killed. | Died. | Recovered. | Remaining. | Fresh Outbreaks. | Horses Attacked. |
| — | | | | | | | | | | | |
| ENGLAND. | | | | | | | | | | | |
| COUNTY.* | | | | | | | | | | | |
| Derby | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Hertford | ... | 1 | 1 | ... | 1 | ... | 1 | ... | ... | ... | ... |
| Middlesex (ex. Metropolis) | ... | 2 | 2 | ... | 2 | 2 | ... | ... | ... | ... | ... |
| The Metropolis | 1 | 2 | 3 | ... | 3 | 3 | ... | ... | ... | ... | ... |
| SCOTLAND. | | | | | | | | | | | |
| COUNTY.* | | | | | | | | | | | |
| Elgin, or Moray | 1 | ... | 1 | 3 | ... | 1 | 1 | ... | 1 | 1 | 3 |
| Renfrew | ... | 1 | 1 | ... | 1 | 1 | ... | ... | ... | ... | ... |
| TOTAL | 3 | 6 | 9 | 3 | 7 | 7 | 2 | ... | 1 | 7 | 3 |

TYPHOID FEVER OF SWINE.

| | Farms or other Places. | | | Swine Attacked. | | Diseased Swine. | | | | Cases which existed in previous Weeks not reported until this Week. | |
|--|--|---|---|--|---------------------------|-----------------|-------|------------|------------|---|-----------------|
| | Number reported upon this Week which have been previously reported upon. | Number upon which Fresh Outbreaks have been reported to have taken place during the Week. | Total Number reported upon during the Week. | Remaining diseased from the previous Week. | Attacked during the Week. | Killed. | Died. | Recovered. | Remaining. | Fresh Outbreaks. | Swine Attacked. |
| ENGLAND. COUNTY.* | | | | | | | | | | | |
| Berks | 3 | ... | 3 | 57 | ... | 17 | 40 | ... | ... | 3 | 64 |
| Buckingham | 4 | ... | 4 | 50 | ... | 6 | 10 | ... | 34 | 4 | 50 |
| Derby | ... | 1 | 1 | ... | 1 | ... | 1 | ... | ... | ... | ... |
| Essex | 1 | 3 | 4 | ... | 28 | ... | ... | ... | 28 | 1 | 12 |
| Hertford | 1 | ... | 1 | ... | 14 | 14 | ... | ... | ... | ... | ... |
| Middlesex (ex. Metropolis) | ... | 1 | 1 | ... | 6 | 3 | 3 | ... | ... | ... | ... |
| Norfolk | 5 | 7 | 12 | 46 | 58 | 49 | 30 | ... | 25 | 2 | 42 |
| Northampton (ex. Soke of Peterborough) | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Notts | 2 | ... | 2 | 3 | ... | 2 | 1 | ... | ... | 2 | 3 |
| Suffolk | ... | 1 | 1 | ... | 13 | ... | 2 | ... | 11 | ... | ... |
| Wilts | 1 | ... | 1 | 3 | 1 | 3 | 1 | ... | ... | ... | ... |
| The Metropolis | ... | 1 | 1 | ... | 11 | 7 | 4 | ... | ... | ... | ... |
| TOTAL | 18 | 14 | 32 | 159 | 132 | 101 | 92 | ... | 98 | 12 | 171 |

* Counties include such boroughs and burghs as are locally situated within the limits of the Counties, or, if surrounded by two or more counties, then they are included in the county with which they have the longest common boundary. Berwick-upon-Tweed is included in Northumberland.

Veterinary Department, Privy Council Office, 14th January, 1879.

THE VETERINARIAN, FEBRUARY 1, 1879.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

MILK EPIDEMICS.

A NOVEL idea is at present agitating the medical mind. Certain zymotic diseases, notably scarlatina, enteric fever, and diphtheria, have been traced to the influence of milk supplied from a particular farm.

In our last number we quoted an instance of the dissemination of the poison of typhoid by means of contaminated milk arising from the carelessness of the owner of the cows, who frequently went to attend to or milk the animals after nursing his sick children.

In the cases which have been recorded of the extension of disease through the medium of the milk supply, it has always been assumed, and frequently proved, that the milk has become infected by the admixture of infective matter from the diseased human subject. In this manner the poison of a disease may be conveyed to a considerable distance, and be introduced into the systems of healthy individuals in a way least calculated to excite suspicion.

When an inquiry in connection with an outbreak of disease led to the milk being suspected the chain of evidence was considered to be complete if the existence of the affection were ascertained on the premises whence the milk had been distributed. The actual cause of contamination might be the sick person himself, or air or water charged with his excreta; in any case it was sufficient to prove the presence of the disease germ in proximity to the milk.

Many outbreaks of zymotic disease have, however, taken place in which some connection with the milk supply could be shown, but in reference to which no possible cause of contamination could be ascertained and in regard to these cases it came to be said that the difficulty would be easily solved if it could be shown that some condition of the cow

and of the milk, independently of contact with infective matter, was concerned in the production of the disease.

Stating the point more clearly than it is stated above, it amounts to this: failing to find any source of milk contamination from without, it is proposed to suspect the animal from which the milk is obtained.

If we read aright the suggestions which Mr. Power and Mr. Smee introduced to the notice of the Pathological Society at the meeting on Tuesday, January 7th, it involves the idea that the cow, under some unknown conditions, may manufacture the poison of scarlatina, enteric fever, and diphtheria, or at least may produce something which, after entering the human organism along with the milk, is converted into the poison of those diseases.

As a possibly incoherent form of diphtheria of man, Messrs. Power and Smee have selected the common disease of the udder known as "garget," a subject which Mr. Smee remarks, "veterinary surgeons know little about."

It may be looked upon as a fortunate circumstance, so far as the mere existence of the speculation as to origin of milk epidemics is concerned, that it emanated from high medical authorities, it would not otherwise have survived its birth. But, as it is, we find it difficult to understand on what basis the committee of investigation, consisting of Dr. Burdon Sanderson, Dr. George Buchanan, Dr. Greenfield, Dr. Coupland, and Mr. Smee are to proceed, unless they commence by the admission that the present views, in respect of infectious diseases, are probably altogether erroneous.

So long as it is maintained that the poison of a disease is only developed in the organism of an individual affected with that disease there is no room for speculation as to other possible sources. On the other hand, if it is to be allowed that the infective matter of scarlatina, for instance, may be produced otherwise than by an individual suffering from scarlatina, what is to save the very exclusive infection theory from expanding to a sufficient extent to include the popular view of the spontaneous origin of infectious diseases?

To the statement that an outbreak of an infectious disease

must have been due to the introduction and diffusion of the poison of that disease from an individual affected with it, unscientific people have often replied, "There must have been a first case of the malady, and therefore the poison must have originated independently of a previous case." No weight has hitherto been attached to this objection, but if we correctly apprehend the meaning of the views expressed at the meeting of the Pathological Society, we are likely to get very far in advance of the popular notion of the origin of infective matter.

So far as diphtheria is concerned, the proposed inquiry may perhaps be conducted without endangering the integrity of any pathological dogma; but if scarlatina is to be included among the diseases, the possible origin of which is in something which is not connected with antecedent cases of scarlatina, it will be impossible to deny the assumption that other infectious diseases may occur under conditions which do not include the previous existence of the maladies.

Extracts from British and Foreign Journals.

IMPORTATION OF AMERICAN CATTLE.

The Toronto Globe, of December 21st, 1878, alluding to this importation of American cattle, says that all is not yet plain sailing for the American exporters of cattle to England. There is at present no United States law regulating the importation of cattle with a view to preventing the bringing in of disease. If the new British Act had been strictly interpreted, the absence of this law would have justified the total exclusion of American cattle from the inland markets of England. But the British authorities preferred to put a liberal construction on the law, as the United States is nearly free from the diseases of which the Act takes cognizance. The ports were therefore thrown open alike to Canadian and American cattle, with the difference against the American that a certificate of health is required to accompany each cargo. The American authorities have appointed the Collectors of

Customs at the various ports to issue these certificates. Of course the Collectors should appoint competent veterinarians as their deputies to make the inspections and grant certificates. If this is neglected trouble is likely to ensue. It is no secret that one of the diseases against which the British Act is aimed—pleuro-pneumonia—has gained a footing in the dairies of New England and the Middle States, and in the absence of vigorous measures to suppress it, the disease is slowly working its way westward. Pleuro-pneumonia, in its early stages, is not a readily recognisable disease. An animal affected with it might easily pass unskilled eyes, and a short time after its arrival in Britain develop the disease in its contagious form. Unless the inspection at the American ports is a rigorous one, sooner or later a diseased animal will find its way over, and in that event the English agricultural papers may be relied upon to make a hullabaloo about it. The Privy Council will then have no option except to order that American cattle be slaughtered at the port of landing, just as they have already ordered shall be the fate of cattle coming from any other country than Canada, the United States, the Scandinavian countries, Spain, and Portugal. The powers of the Privy Council would extend to absolutely prohibiting the importation of American cattle altogether, just as they have directed as regards Austria, Greece, Italy, Turkey, Russia, Roumania, Montenegro, Bosnia, and Herzegovina, but we presume this power would not be willingly enforced. Sufficient danger, however, exists to make it advisable for the United States forthwith to pass a stringent law on the subject of the importation of cattle. There is still greater necessity that the State authorities should bestir themselves, and enact laws under which the smouldering embers of pestilence among their herds may be promptly stamped out. As long as contagious pleuro-pneumonia is permitted to exist among American cattle the export trade with England is resting on very insecure foundations. English experience has shown that the disease is one easily stamped out, and there is no reason why it should be permitted to exist.



ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

(Continued from p. 50.)

THE Hon. Mr. Egerton added that it would be observed that the last paragraph but one alluded to the new orders which had just been issued, and in consequence of which it would be necessary to provide quarantine ground for animals coming from certain countries. In all probability (cattle plague having broken out in Germany) Holland and Belgium would be unable to send animals to the forthcoming exhibition; but, assuming French cattle to be in a healthy state, of course, it was desirable that quarantine should be made. He did not think the council could ask for a relaxation of any restrictions that might be deemed necessary.

The *Duke of Richmond and Gordon, K.G.*, said, in the first place he must apologise to the Council for not appearing to assist more in carrying on the business of a Society in which he took the deepest and most lively interest—an interest which he had inherited, and which he hoped to pass on to those who came after him. He appeared before the Council of the Society now partly as a member of that Council, partly as an agriculturist, but more particularly, probably, as Lord President of the Council; and he must say that when he received a copy of the proposed prize list, he was struck with the inconsistency of his colleagues on the Council and in the Shorthorn Society, in issuing a prize sheet in which was included a list of prizes for a number of animals that were invited to come from foreign countries. Without wishing to say anything personal to his colleagues, he thought they would all bear him out when he said that since he had had the honour of being Lord President of the Council, they had continually requested him to legislate for the prohibition of the importation of foreign animals. The views entertained by the Royal Agricultural Society and by the Shorthorn Society were these:—That to get rid of those diseases which, as they stated—and he thought perfectly rightly and justly—had affected so prejudicially their interests in this country, it would be necessary to pass a law enacting that all foreign animals should be slaughtered upon the other side of the water. (Hear, hear.) Of course it became his duty to look into the matter very closely, and he found it was impracticable to carry out those views; and he therefore endeavoured to find a mode of solving this difficulty, and accordingly he brought in what he thought a good measure, but which at the same time was a very stringent one. It dealt with foreign animals in a very active manner. That measure, how-

ever, did not pass through both Houses of Parliament; it did pass eventually in a modified form, but still in a form which he believed would be extremely advantageous in the way of keeping down disease, and preventing it from appearing in this country. (Hear, hear.) He was perfectly aware that in consequence of the great kindness and hospitality which was shown in Paris to all their friends during the past year, it had been thought advisable to make some return to the foreigner for what he had done to us. (Hear, hear.) If that could be done with safety, he would be the first to agree to it; but he did not think that in doing so they should run any risk of disease being introduced into England by admitting foreign animals with all the diseases which they could bring with them. That there was a great danger in coming into contact with these animals, those who took any active part in the Exhibition at Paris would, he was sure, be ready to admit. English animals went there free from disease, and came back with foot-and-mouth disease, so much so that he had to establish a quarantine station near London to receive them on their return; and he was afraid that he had incurred the displeasure of some of his agricultural friends in the far north in consequence of their long detention in quarantine. There were certain countries from which no animal of any sort or kind could come at the present moment—viz., Russia, Austria, Italy, Greece, Turkey, and the Principalities. Then, again, no cattle could come from Belgium or Germany; and when the Contagious Diseases (Animals) Act, 1878, came into operation, inasmuch as there was an outbreak of disease in Germany at the present moment, it was almost certain that on the 1st of January Germany and Belgium would continue to be prohibited countries. Other foreign animals were slaughtered at the port of landing from all countries except Norway, Sweden, Denmark, Spain, and Portugal, and from America and Canada. The Act provided that animals coming from countries subject to slaughter might be sent for exhibition subject to quarantine regulations made under an Order in Council. That Order in Council provided that the landing at a port of foreign animals is subject to the following regulations:—The animals must be accompanied by a declaration of the owners, assignees, or agents, to the effect that the animals are intended for exhibition, acclimatisation, or domestication; secondly, the animals when landed are to be detained in the quarantine station for a certain period (which may be seven, or fourteen days, or any longer period according to circumstances); and, thirdly, when moved they are to be accompanied by a certificate of an inspector of the Privy Council that they are free from disease. These were the regulations issued under the Foreign Animals Order, and made under the provisions of the

Contagious Diseases (Animals) Act of this year ; so that from a country like France, for example, they would be able to send animals for exhibition under these conditions, subject to such quarantine regulations as might be issued by the Privy Council ; and he thought the foreign exhibitors ought to know the exact regulations not only that had been made but which might be made. It was quite obvious that the regulations which he might make would depend upon the state of matters at the time, but he thought it should also be shown to the foreigner that a country which was called a non-prohibited country to-day might be a prohibited country to-morrow ; and if a foreigner got up his animals with the intention of exhibiting in London next year, it might be necessary between this time and next June to declare his country a prohibited country. Therefore the foreign agriculturist ought to know the exact condition in which he might find himself. Before consenting to admit foreign animals, very stringent regulations would be imposed by the Privy Council. Of course the Royal Agricultural Society would know that when he passed orders for quaaantine they would be solid and *bona fide*, and that he was bound to carry out under the Contagious Diseases (Animals) Act, and by these Orders in Council, a real and *bona fide* quarantine. What he intended to do was to have such a quarantine as should, if possible, prevent us getting any foot-and-mouth disease into the show-yard at Kilburn. By some means or other, whether by the regulations which have been in operation, or by the more thorough inspection of trucks and railway stations, there has not been for some years so little foot-and-mouth disease in the country as there is at present ; and therefore he should be extremely sorry if, by a too lavish hospitality to foreigners we should bring over those diseases which foreign cattle were somewhat prone to. He would beg and urge upon the Council that before the prize-sheet was issued to the foreigner there should be a clear notice as to what he would undertake by entering his animals to be shown at Kilburn ; and that it was quite possible that, though he might enter his animals within the time specified, circumstances might arise before the exhibition took place which would entirely prevent his animals from coming to this side of the water. He understood that the Society were going to provide a quarantine station, but he apprehended that would be done under the Orders in Council, and that some quarantine station might be provided nearer to London than Southampton. In any Orders in Council issued in accordance with the Act he should only make such regulations as he deemed necessary to prevent the introduction of diseases into the country.

Mr. Jacob Wilson was sure that the very best thanks of the

Council were due to the noble duke for attending the Council to give so complete a statement of his views ; but his Grace would doubtless admit that he had painted his picture in the darkest possible colours. With regard to the proposal to hold an international show, Mr. Wilson reminded the Council that on the occasion of the Society's last exhibition in London, when the late Prince Consort was President, it was international, and it was therefore considered desirable to make the coming exhibition international, especially as they had the honour of having the Prince of Wales as President. He did not think that English agriculturists had anything to fear from foreign competition, but he thought that both Englishmen and foreigners might learn a great deal from an International Agricultural Exhibition. The whole question was, no doubt, of greater value to the consumer than to the producer of meat, and it was this view which induced the Mansion House Committee to offer the very handsome prizes for foreign stock and produce shown in the prize list, and otherwise to make the character of the show international. During the whole of the time when the subject was receiving the anxious consideration of the Stock Prizes Committee it was understood that precautions of a very stringent character would have to be taken, and foreign agricultural societies had already been warned of the fact. He could not sit down without alluding to the charge of inconsistency brought against the Council of the Society, because the importation of specially selected animals for exhibition had always been contemplated by the Government; and when the Council asked his Grace and the Government to bring in some measure to prevent diseases being introduced into the country, it had in its eye the scum of foreign animals which were imported in the ordinary course of trade from week to week in vessels reeking with disease, and not animals specially selected for exhibition, in specially chartered steamers. He begged to move the following resolution :—“That the Privy Council be respectfully requested to inform the Society, as far as possible, under what conditions and regulations foreign animals from different countries will be allowed to be exhibited in the Society's show-yard next year, in the event of the countries from which the animals are sent being declared free from disease at the time when animals are exposed.”

The *Hon. W. Egerton* thought the Council should be satisfied with his Grace's explanation, and the only thing they could do was to furnish the foreigner with particulars of all the regulations which might be enacted.

Colonel Kingscote seconded Mr. Wilson's proposition. The offer of prizes for foreign animals had not emanated from the Society, but from the Mansion House Committee, whose views

the Council had endeavoured to carry out. The one object they had in view had been to bring over foreign animals under such regulations as happened to be in force at the time whatever they might be. The proposition of Mr. Wilson would be very useful, because it would enable the Society to publish to the countries abroad exactly what they would have to expect if disease broke out in May or June.

After a conversation in which Mr. Randall, Mr. Dent, Mr. Pain, Earl Cathcart, and the Duke of Richmond took part, the Committee's report, with the addition of Mr. Wilson's motion, was unanimously adopted; and on the motion of the Hon. W. Egerton the renewal of the veterinary grant of £250 for the year 1879, for general purposes and for special scientific inquiries, was also agreed to.

Letters respecting carriage of cattle in horse-boxes were read.

Mr. Jacob Wilson remarked that Australian ports have been opened for the conveyance of cattle from this country, but one of the conditions is that there shall be *ninety days' quarantine* on arrival, and the other condition is that conveyance in England shall be by horse-boxes only.

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF COUNCIL, HELD JANUARY 15TH,
1879.

Present—The President in the chair; Professors Brown, Williams, Pritchard; Messrs. Dray, Greaves, Freeman, Balls, Batt, Blakeway, Cartwright, Collins, Cuthbert, Harpley, Moon, Taylor, and the Secretary.

The Secretary read the notice convening the meeting.

The minutes of last meeting were read and confirmed.

Correspondence.

The *Secretary* announced that the following letters had been received:—(1) From Professor McCall; Messrs. Broad, Cox, Proctor, Morgan, and Reynolds, regretting their inability to attend the meeting.

(2) From the Pharmaceutical Society and the College of Physicians, acknowledging with thanks the receipt of a copy of the register.

The *Secretary* stated that a copy of the work revised by Mr. Mayer on the 'Anatomical Outlines of the Horse' by Macbride, and a pamphlet by Dr. Voelcker on 'The Influence of Chemical Discoveries on the Progress of English Agriculture' had been presented to the library of the College.

On the motion of *Mr. Dray*, seconded by *Mr. Taylor*, a vote of thanks was awarded to the donors for their presentations.

(3) Letters from *Mr. Case* and *Mr. Gerrard* wishing to be informed whether they were liable for duty on armorial bearings, if they used the College arms.

The *Secretary* stated that a reply had been sent in the affirmative.

(4) A letter from *Mr. Rose* enclosing an advertisement from the *Wellington Journal*, Salop, in which a *Mr. C. E. Onslow*, innkeeper, styled himself veterinary surgeon in practice since 1845, and stated that he was well acquainted with anatomy and surgery according to the rules laid down by the Veterinary College, and that he was a cattle disease inspector by appointment. The writer wished to know how *Mr. Onslow*, not being a qualified V.S., could be so appointed.

The *President* explained that as the Act of Parliament at present stood there was no remedy for such cases.

Professor Brown further stated that an order of Council provided that men could be appointed with no qualification other than that they had been previously so employed; and so long as the present Act remained in force they had no power to object to the appointment of persons who were not Members of the Royal College of Veterinary Surgeons. To a more stringent rule there was this objection, that if the local authorities in future objected to it they might apply for a further order; and if they did he did not know how the Privy Council was to escape from the demand for relaxation. So far as the matter now stood, the arrangement was as satisfactory as it could be made. It would be much better if the original definition had been adhered to, but then the difficulty would have had to be faced that there were a large number of local authorities who were simply incapable of appointing members of the Royal College, because they were not to be found in their respective districts. He had examined the list and found that there were fifty local authorities authorised to appoint local inspectors in whose district there was no resident veterinary surgeon. There was indeed one county in Scotland where there was no resident member. Under those circumstances it was not an unreasonable request that something should be done to relieve them of a difficulty which was otherwise unsurmountable. He should like to add that the local authorities had appointed veterinary inspectors from the members of the College to a very large extent. In some counties they had appointed every member they could find, and thus saved all the travelling expenses which otherwise would have been incurred.

The matter then dropped.

The *Secretary* read a letter from the Hon. Secretary of the Central Veterinary Medical Society thanking the council for the use of the Board-room, and asking for the continuance of the same.

The application was granted.

The *Secretary* stated that a letter had been received from Dr. Favè, who had been for five years with a veterinary surgeon in France; who held a diploma, and was a licentiate of the French College of Physicians, and who wished to become a candidate for the diploma next session. His diploma for M.D. was lodged with Mr. Powys of London.

The *Secretary* was instructed to write to the effect that no exception could be made to the ordinary rule as laid down in the bye-laws.

A letter was also received from Mr. F. C. Clark, Birmingham, enclosing one from the secretary of the Royal Veterinary College.

The *President* explained the circumstances of the case. It was a good many years since Mr. Clark came up. He studied for one or two sessions, and he now wished to know whether he could pass under the old rules; but as these rules would cease in July, of course he could not come up for examination after that date.

Letters were received from Messrs. Edwards, Wycherley, Davies, and Ashe, rejected candidates, wishing to be informed whether there would be an examination at Christmas.

The *Secretary* stated they were informed that there would be an examination.

A letter was received from Mr. F. T. Murray, of Tralee, county Kerry, in which he stated that he wished to come up for his first examination in April next, and that he ought to be allowed to read at home and attend a "grinder" as in the medical profession.

A letter was received from Dr. Dunsmure, dated 16th December, stating that there were a limited number of candidates (eight) for the "pass examination" and one or two for the minor, and that there would be some difficulty of arranging the Board without incurring great expense.

The *President* in a letter replied that, so far as justice was done and a fair Court assembled, and there was a good examination, the Council would leave the pecuniary arrangement in Dr. Dunsmure's hands.

The *Secretary* read the following letter which had been received from Professor Walley:—

“ VETERINARY COLLEGE, CLYDE STREET,
EDINBURGH; Dec. 19th, 1878.

“ To the Secretary of
The Royal College of Veterinary Surgeons.

“ SIR,—I beg to bring before the notice of the Council what I consider a hardship, under certain circumstances, to students, in connection with rules 32, 33.

“ At present a student is required to study three terms before presenting himself for the first examination, and two other terms before he is eligible for the second examination, *i.e.* presuming that he has passed his first. Now, if from any cause the student is prevented from going up for his first after the expiry of three terms, or in the case of his having been rejected after the expiration of one; his course at College is much prolonged and a considerable addition is made to his College expenses. There are at present six students (two of whom were rejected in July last) in this College eligible for the first examination in January next, but owing to the fact that there are none from the other Scotch schools they cannot present themselves until April, thus throwing them back three months, and that from no fault of their own; and if they pass in April they will not be eligible for the second examination until January, 1880.

“ I submit for the consideration of the Council the following proposition:—

“ ‘That if from any unavoidable cause a student is prevented from presenting himself for any examination in the usual course, he shall be allowed to go up for the next examination after studying one term less than the rule at present prescribes.’

“ Thus, in the case of the six students referred to above, supposing that they pass the first examination in April next, they will have to wait, as I have before remarked, until January, 1880, before they are eligible for the second; but if my suggestion were adopted they would be able to present themselves for the second examination in July, 1879.

“ I shall be obliged by your bringing this matter before the Council at the earliest opportunity.

“ (Signed) THOMAS WALLEY.”

The *President* said that the proper course for Prof. Walley to adopt was to give notice to the Council that he intended to move the rescinding of the laws in question.

Examinations.

At a meeting of the Court of Examiners for “the pass examination,” held on January 6th, 1879, 4 students passed, and 8 were rejected.

At a meeting for the “second examination,” held on January 7th, 8 passed, and 1 was rejected.

At a meeting held on January 8th, 1879, for "the first examination," 9 passed, and 3 were rejected.

At a meeting on the 9th of January, 4 passed their "first examination," and 3 were rejected.

The *President* said he had put a notice on the paper about the instructions to examiners. At present no definite instructions had been given to them. The conventional rule was that five "Good" entitled the candidate to "very great credit," and four "Good" and one "Moderate" to "great credit;" while five "Sufficient" enabled him to pass. His feeling was that "Sufficient" meant "Sufficient" and no more than "Sufficient;" that therefore one mark below "Sufficient" should reject a candidate, unless on one or more other subjects he had got a "Good." It would run in this way:—Four "Sufficients" and one "Indifferent" *reject*; three "Sufficients," one "Good," and one "Indifferent," *pass*. Surely the meaning of "Sufficient" was that it was no more than sufficient. Any mark that went below that, unless it was qualified by some higher mark on some other subject, ought to reject. They were all in favour of having more strict examinations every year, and he thought the council should give instructions that anything less than five "Sufficients" should reject a man, unless qualified by a higher mark.

Professor Williams said he agreed with the President, but at the same time he saw a difficulty. A man might make two or three "Good" marks, and some "Sufficient," and would be marked "Bad," and how to deal with such a case was a matter of some difficulty. Suppose a man had one good, or one very good, a "Bad" mark would neutralise the "very good" and bring it down to "Sufficient;" therefore he saw some difficulty in the matter.

The *President*.—You mean not that you see any difficulty in what I suggest, but that it should be carried somewhat further?

Professor Williams.—Yes.

Professor Brown said it occurred to him that there would always be a difficulty in giving the examiners instructions for their guidance. If what the President suggested could be carried out, there would be no difficulty about it; but if they went beyond that there would be no end of difficulty.

Mr. Collins suggested that so many marks should be given in each class and each division, so that a certain gross number would not let him fall below a certain number on any particular subject.

Mr. Greaves said it always appeared to him that different subjects should be valued at different rates.

Professor Williams suggested the appointment of a committee

to investigate the matter, and if this were done, it would meet his proposal for the suspension of bye-law 31, and the new bye-law 46.

The *President* said he should be glad to assent to the appointment of a committee to arrange for the marks and the words to be used, and the value of the different portions of the examination.

Professor Williams said there was also another thing to be taken into consideration, namely, the finance. He had recently had a conversation with Professor Turner, and he (Professor Williams) stated that justice would be done to the examiners and the College by giving them so much per hour. By this plan the financial difficulty in which the College had been placed would be overcome. If the matter were left to a committee a very satisfactory arrangement might be come to.

After some further remarks,

The *President* moved the appointment of a committee "To regulate the marks to be assigned to the different subjects of examination, the marks which are to pass or to reject candidates, and the payments to be made to the examiners; also to consider any arrangements which can be made to suit candidates for examination."

Professor Williams seconded the motion which was carried.

The members of the Committee appointed were, The President Professor Turner, of Edinburgh, Professor Williams, Professor Brown, Professor Pritchard, and Mr. Collins.

The Obituary notice was read.

The Registrar reported that 100 Registers have been sold since their last issue, and eight Registrar's fees had been received.

The Secretary then read the Examiners' Report of the Examination of Candidates for the Royal Agricultural Society's Prizes, which Examination took place on January 7th 1879.

The report was ordered to be forwarded to the Secretary, Royal Agriculture Society.

*To the President and Council of the Royal College of
Veterinary Surgeons.*

The Examiners appointed to test the qualifications of the Students, competing for the prizes offered by the Royal Agricultural Society of England, for proficiency in the pathology of Cattle, Sheep, and Pigs, beg to present their report, and in doing so wish at the same time to express their regret that the number of Candidates should be so limited; but they do not attribute this to indifference on the matter so much as to the qualifications insisted upon to render them eligible being perhaps too stringent.

It has come to the knowledge of the examiners that several others that did not quite reach that standard have expressed disappointment at not being allowed to compete. They also think that the period after the completion of their studies instead of being limited to fifteen months might be without injury extended to two years.

The Examiners also hope that the lengthened period of study at the schools which has not yet come into action, and the improved education thereby given may increase the number of competitors in future years.

Out of the Students who had complied with the existing requirements, one had left this country for the United States, and of the others at the last moment, only one presented himself before the Examiners.

The result of this examination has however fully equalled any previous one. Appended to this report is a copy of the questions that were propounded in the practical, oral, and written examinations.

The maximum number of marks was set at 1500, and the number reached by Mr. John Herbert Callow was 1230, which, in opinion of your Examiners, fully entitles him to the First prize.

(Signed)

ROBERT L. HUNT,
THOS. WALTON MAYER,
D. GRESSWELL.

January 7th, 1879.

Mr. Harpley thought that some little revision of the qualifications for members of the College who came up for examination might be made. Some of the Students who were likely to practice in the country, no doubt spent a great deal of energy and time, in acquiring the knowledge compatible with the practice of diseases of cattle, with the hope that they would be able to come up for the Examination of the Royal Agricultural Society, and they passed very good examinations in this particular branch. They had more than qualifying marks, sometimes, in the studies for examination. There was a special study for cattle, but unless they got five "Goods" they were not able to come up for examination. He thought that to some little extent the qualifying marks for "great credit" or "very great credit" might be relaxed, so as to enable more members to come up for examination. It certainly seemed a most unfortunate thing that when the Royal Agricultural Society were trying to act in unison with the College, and a high prize offered, one student should only come up for examination. As far as the Secretary and the Royal Agricultural Society were concerned, they were most anxious to encourage the students that came before the Board of the College, so that he

would urge upon the Council to relax their rules, in order that more men might come forward.

Mr. Greaves said he agreed entirely with every word that had fallen from *Mr. Harpley*, and thought that his proposition was a very prudent and sensible one.

Mr. Harpley promised to see the Secretary of the Royal Agricultural Society, and ask whether the Committee would assent to the alteration, and if so he would bring the subject before the Council for reconsideration.

This course was assented to.

The Reports of the Finance Committee and Treasurer's Balance-sheet were presented, and stated that the vouchers for receipts and payments during the preceding quarter had been examined and found correct. The present liabilities amounted to £109 16s. 5d., which the Committee recommended should be discharged. The balance at the banker's amounted to £631 4s. 5d.

The *Secretary* stated that the treasurer had written, asking how much of the balance at the banker's the Council would agree to invest.

It was resolved that £300 should be invested.

On the motion of the *President*, seconded by *Mr. Dray*, the report was received and adopted.

Cheques were ordered to be drawn for the current expenses.

The *Secretary* stated that, at the request of the *President*, he called upon *Mr. Greenwood*, house agent, relative to obtaining information as to purchasing a site of land or premises suitable for a College. *Mr. Greenwood* promised that he would make the inquiry.

The *Secretary* stated that a letter had been received from *Mr. Broad*, of Bath, asking the *Secretary* to write to *Mr. T. D. Gregory*, of Bideford, Treasurer to the late West of England Veterinary Medical Association, who held certain funds which had been promised some years ago to the Royal College of Veterinary Surgeons.

A letter had also been received from *Mr. Gregory*, stating that he was uncertain by whom the funds were assigned, and offering to send the amount to the Council, provided he was indemnified from all chance of having to pay it to any other body.

The *Secretary* was instructed to write, accepting the offer.

Mr. Harpley, as executor of his late nephew, *Mr. William Field*, stated that *Mr. Field* had left £100 to the Royal College of Veterinary Surgeons; and £50 to the Benevolent Society. There had been some legal proceedings as to the legality of the payment, but, as the question had been decided on the previous Monday, he had the pleasure to inform the Council that

he would be able to hand over the two sums mentioned. There would be some legal expenses; but there would also be something due for interest, and he thought that, taking the one item against the other, the original sums could be handed over almost intact.

The *Secretary* read the following

Report of the Committee appointed to consider the Educational Tests to be required from Candidates for fellowship.

The Committee recommend that the educational standard should for the present and until further notice consist—

1st. In such knowledge of Latin as would enable a candidate to write a Latin prescription, and to translate a given prescription from Latin.

2nd. In such acquaintance with the ordinary rules of arithmetic as is necessary for carrying on the business of a veterinary surgeon.

3rd. In writing a composition or letter on a given subject with correctness and facility of expression and grammatical accuracy.

January 6th, 1879.

The *President* said it would be seen for the present that, in accordance with the views of the majority of the Council, a very moderate standard had been taken, but still sufficient to secure the social and educational status of those who were admitted to the degree of Fellowship. At some future day, the standard might be raised. He begged to move the adoption of the report.

Mr. Dray seconded the motion, which was carried.

Letters were received from four candidates holding the Highland and Agricultural Society's certificate, wishing to be informed of the rules for admission into the body corporate, and stating that many others required the same information. One of the applicants was desirous of coming up for the Fellowship degree.

The *President* said that they could not be admitted until the pending arrangements were completed.

The *President* said he had the pleasure to bring before the Council the Articles of Agreement drawn up by the Committee appointed to consult with the Highland and Agricultural Society, and he was glad to say that he believed the Highland and Agricultural Society would sign at their annual general meeting this day.

The *Secretary* read the agreement, which is as follows:—

ARTICLES OF AGREEMENT made and entered into this day of January 1879 BETWEEN THE HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND, incorporated by Royal Charter or

Letters Patent, bearing date the 17th day of May 1787, by the name and title of The Highland Society of Scotland at Edinburgh, and of new incorporated by the name and style of The Highland and Agricultural Society of Scotland by Charter or Letters Patent granted the 18th day of June 1834 (and hereinafter called "the Society") of the one part, and THE ROYAL COLLEGE OF VETERINARY SURGEONS incorporated by Royal Charter or Letters Patent, dated the 8th day of March 1844 (and hereinafter called "the College") of the other part. Whereas the Society have from 1823 instituted lectures on veterinary science and medicine, and appointed examiners to examine students therein, and until 1844 granted to such students certificates of proficiency. And whereas, in 1848 the Society reconstituted its Board of Examiners, and have since granted annually certificates of qualification. And whereas it was amongst other things provided by the said Letters Patent of the 8th day of March 1844 that the concerns of the College should be directed and managed by a Council to be constituted as therein mentioned. And further that the said Council should and might make any orders, rules, and bye-laws, for fixing and determining amongst other things the times, places, and manner of examining students who should have been educated at the Royal Veterinary College of London or the Veterinary College of Edinburgh, or such other veterinary colleges as therein mentioned, and who might be desirous to become members of the College, and for regulating the nature and extent of such examinations, and for the appointment of persons to examine and determine upon the fitness and qualifications of such students, and for the admission or rejection of such students as members of the College, and for fixing and determining the sum and sums of money to be paid by such students either previous to their examination or upon their admission as members of the College or otherwise and generally touching all other matters relating to or connected with the College, and the same orders, rules, and bye-laws from time to time to alter, suspend, or repeal, and to make new orders, rules, and bye-laws in their stead as the Council should think most proper or expedient, so as the same were not repugnant to the Letters Patent now in recital, or to the laws of the realm. And whereas by a Supplemental Charter or Royal Letters Patent, dated the 23rd day of August 1876, it was amongst other things declared that with certain exceptions therein mentioned, and not material for the purposes of these presents, the College and the Council of the same should have and continue to have all such and the same jurisdiction, powers, and authorities for and with respect to the government of the College, and for *inter alia* the making, ordaining, confirming,

annulling, or revoking orders, rules, and bye-laws, and transacting and ordaining all other matters and things whatsoever for the regulation, government, and advantage of the College as the College and the Council thereof respectively had under or by virtue of the said hereinbefore recited Charter or Letters Patent, or in any other lawful manner. And whereas, in pursuance of the powers conferred upon the College or the Council thereof by the said Letters Patent respectively, certain bye-laws have been made with respect, among other things, to the examination of candidates for the diploma of the College, and such bye-laws are still in force. And whereas, the following arrangement has been made and entered into between the College and the Society with a view to the admission of the holders of the certificates of the Society as members of the College, and also for the purpose of terminating the examinations heretofore held by the Society. Now these presents witness, and it is hereby agreed and declared and in particular the College (so far as the stipulations and provisions hereinafter contained are to be performed or observed by them) do hereby for themselves and their successors covenant and agree with and to the Society and their successors. And the Society (so far as the stipulations and provisions hereinafter contained are to be performed and observed by them) do hereby covenant and agree with and to the College and their successors in manner following (that is to say):

1. Every or any holder of a Certificate granted by the Society in manner aforesaid since 1848 shall, on application and on payment of such fees as are hereinafter specified, be admitted as a member of the College, and shall not be required to submit to any further examination previous to such admission.

2. Every holder of a Certificate granted by the Society as aforesaid, from 1848 to 1872, shall be admitted as a member of the College on payment of a registration fee of one guinea.

3. All candidates for such admission to whom such Certificates as aforesaid shall have been granted since the year 1872 shall in like manner, without being required to submit to any further examination previous thereto, be entitled to such admission on payment of fees, according to the following scale or table (that is to say):

- (a) Every holder of a Certificate granted during the year 1873 on payment of two guineas.
- (b) Every holder of a certificate granted during the year 1874 on payment of three guineas.
- (c) Every holder of a Certificate granted during the year 1875 on payment of four guineas.
- (d) Every holder of a Certificate granted during the year 1876 on payment of five guineas.

- (e) Every holder of a Certificate granted during the year 1877 on payment of six guineas.
- (f) Every holder of a Certificate granted during the year 1878 on payment of seven guineas.

4. All students now enrolled at any of the teaching schools connected with the Society to whom such Certificates as aforesaid shall hereafter be granted consistently with the provisions of these presents shall be admitted and enrolled as members of the College on payment of a fee of seven guineas.

5. The examinations heretofore held by or on behalf of the Society shall be discontinued as from the 1st day of January, 1879, but this stipulation shall not preclude or prevent the Society from holding examinations according to its existing bye-laws or regulations for persons already admitted as students of the Society who may hereafter elect or claim to be examined by the examiners thereof, in preference to submitting to examinations by or on behalf of the College.

6. The College and Society respectively shall alter, vary, and annul their existing orders, rules, and bye-laws, if and so far as may be necessary to give full and complete effect to this Agreement, and shall also, if required, apply for and use their best endeavours to obtain Supplemental Charters for the same or the like object.

7. If any doubt, difference, or dispute shall hereafter arise between the parties hereto or their Successors, touching these presents or the construction hereof, or any clause or provision herein contained, or the rights, duties, or liabilities of either party in connection therewith, the matter in difference shall be referred to two arbitrators or their umpire, pursuant to and so as with regard to the mode and consequences of the reference, and in all other respects to conform to the provisions in that behalf contained in the "Common Law Procedure Act, 1854," or any then subsisting statutory modification thereof. IN WITNESS whereof the Society and the College respectively have hereunto caused their respective Seals to be affixed the day and year first above written, &c.

The *President* moved that the agreement be approved and in due time signed.

Mr. Taylor seconded the motion, which was carried.

Professor Williams said he would withdraw his notice of motion, which was rendered unnecessary by the committee that had been appointed, on the whole question of examination.

It was resolved "That the Committee should apply to the Privy Council for a Supplementary Charter to carry out the agreement with the Highland and Agricultural Society."

The meeting having terminated,

A SPECIAL MEETING

was then held to consider a notice of motion by Mr. Taylor for the alteration of bye-law 37, which is as follows: "No student shall be allowed to present himself before either section of the Board of the Royal College of Veterinary Surgeons for his first, second, or third examination more than three times."

Mr. Taylor, in bringing forward his motion, characterised the bye-law in question as cruel, oppressive, and unjust, both to the student and his parents. He gave several reasons in support of his proposition, and remarked that there was no such bye-law in the clerical, legal, or medical professions. It was a hardship that a man after having passed his first and second examinations should be rejected on the third. It took away his last and solitary hope, and left the student a dejected and degraded man, and made the College the means of sending him into the world to get a livelihood under the guise of professional quackery or empiricism. He called attention to the fact that the clever student did not always make the best practitioner, but it was more often the plodding, industrious student who by sheer industry obtained that scientific knowledge which, after he had gained it, he retained all the more firmly in his mind. It was an injustice, to his mind, not to allow such an one sufficient time to complete his education, and he would therefore move that bye-law 37 be expunged.

Mr. Greaves, in seconding the motion, fully concurred in the remarks made by Mr. Taylor.

The *President* said he regarded the existing bye-law as a most useful and beneficial one. It was an advantage to the student, because it checked idleness on his part; and it was an advantage to the father, because it prevented the student from wasting his time at College. It was most disadvantageous to a school to have a number of idle old students hanging about spreading around them an atmosphere of idleness. A veterinary student ought to be a man of quickness of parts and able to get through his work in a moderate amount of time. He did not see any injustice in the rule; on the contrary, he thought it was a most valuable one, and moved that the Council should stand by it.

Mr. Collins said he agreed with every word that fell from the President. At the Royal Veterinary College there were eleven who had been rejected three times, and twenty-one who had been at the college from periods varying from six years downwards. They found London a very pleasant place to live in, and as long as they remained at College and enjoyed themselves the parents found them the means. As the President had said, they dis-

seminated an atmosphere of idleness throughout the College. They knew all the haunts and amusements throughout London, and no doubt enticed and led away fresh lads who came to town perhaps for the first time. He did not think it was desirable to have a number of these men hanging about College. As to the dull members which some expressed a wish to legislate for, he thought that as a rule it was not the dull ones that failed to pass, but rather the lazy and idle men. They were generally sharp and quick, but they preferred to hang about London. He thought it was desirable to stick to the rule as it was at present.

Professor Williams said he had always objected to the bye-law, and he would support Mr. Taylor in favour of its being expunged. As to the question of idle students hanging about the College, the Royal College of Veterinary Surgeons had nothing to do with it; it was a question entirely for the schools. He had sufficient experience to say that, if the bye-law was retained, now and then an injustice would be done to the slow, plodding, but deserving student, who, although he might not pass with three examinations, would eventually pass and become a good member of society.

The question was then put to the vote, when eight members voted for the amendment, and eight for the motion.

The *President*, following the example of the House of Commons, gave his casting vote in favour of the *status quo*, but said it remained for Mr. Taylor to bring forward his motion at a future meeting.

The motion was therefore lost, and the bye-law allowed to remain as it was.

On the motion of *Mr. Blakeway*, seconded by *Mr. Dray*, it was resolved to send a letter of condolence to Professor Simonds on his recent domestic bereavement.

The *President* said he had had a letter from the Secretary of the Highland and Agricultural Society, that they had consented to the agreement that had been under discussion and had agreed to sign it.

On the motion of *Mr. Dray*, seconded by *Mr. Taylor*, a vote of thanks was passed to the President for his conduct in the chair, and the proceedings terminated.

CENTRAL VETERINARY MEDICAL SOCIETY.

At a meeting held Thursday, December 5th, Mr. H. T. Batt occupied the chair in the absence of the President. The discussion

of the President's observations on the Skin Epizootic was then resumed.

Mr. Hunting said that he gathered from the minutes just read that the affection was termed Ecthyma; if so, was he to understand it as an affection similar to that in the human subject—papules running on to pustules, followed by suppuration and scab formation? If so, it was allied to a disease he had noticed lately, not only in his patients, but in his own yard among nearly all the horses. It seemed to be conveyed by the saddle, crupper, or harness generally, as the shoulder, back, or top of the rump, was the most affected. It was noticeable also that simple treatment was effectual, warm water, fullers' earth, and glycerine being used. Some skin diseases were difficult to name specially, in others no mistake could be made, such as mange or ringworm. In some cases the scabs were pretty distinct till they reached maturity, when a number ran together, forming a rather nasty sore.

The *Chairman*, regretting he had not heard the President's remarks in introducing the subject, said he had had great experience of the subject during the last nine months, especially in large studs. In some cases no treatment was required; others, again, were very troublesome, especially in high-conditioned animals. Had also had some hundreds of cases where no maize was given. In the difficult cases lead lotion and carbolic wash, with fullers' earth, afforded quick relief; internally he began with a dose of physic, subsequently gave arsenic and copper, with speedy results; the boils disappearing in about ten days. Of its contagiousness he had no doubt.

Mr. Shaw said that in a case now under treatment there was an immense slough in the shoulder. He gave arsenic and applied zinc lotion. The disease was taken by contact with a recent purchase.

Mr. Daniel said he would only observe that he did not regard the maize feeding as a cause of the disease, as when it first commenced the tram horses were not fed on it at all. He had some doubts as to its contagiousness, because of instances where horses exposed to it had not taken the disease.

Mr. Charles considered it clearly contagious. He lately attended two thoroughbred mares, out of town, driving down with his own pony, till then perfectly healthy. The pony was put up, and while waiting a cloth was thrown over him, which, though it belonged to the establishment, he could not say had been on the affected animals, but three days after the pony was badly diseased, and he could instance authentic cases from the saddle.

Mr. Daniel said he did not mean to say that the disease was non-contagious, but to point out a fact worth knowing, viz. that all were not affected though they rubbed against diseased horses.

Mr. Hamilton said all animals, like the human subject, were

not liable to take disease even if exposed. Till the nature of the disease was decided it was like working in the dark. The non-reception of disease by those exposed to it would almost point out that they had already had it.

Professor Axe, who now attended, regretted an engagement had delayed him, said it would be idle for them to discuss the parasitic or contagious theory unless they had some data to go by. He wished now simply to relate the results of some minor experiments so far as they had gone. He had applied to an animal's skin a quantity of matter removed from an affected horse, the hair being previously clipped from the withers, and the scab matter was rubbed sharply into the surface. In the course of clipping the hair the skin had been slightly irritated by the scissors, and an exudation followed, but as yet no eruption had appeared similar to that in the disease, only a serous exudation. A rug transferred from a diseased to a healthy animal becoming diseased would suggest its contagiousness, but the same rug had not given it to another healthy animal. He had also examined the purulent matter without finding any parasitic organisms, still it might be determined to be parasitic and contagious after further research.

Mr. Hunting wished to direct Professor Axe's attention to a statement made earlier in the evening respecting immunity from attack, viz. that in, say a stud of twenty, nine might be exempt (as he knew had been the case), it was suggested that they might already have suffered. But he could hardly understand immunity, if it were parasitic, on such a ground. Another feature was a considerable amount of fever and excitement when the pustular condition was reached. In exanthemata, as seen in cow-pox, that was about the first symptom.

The discussion then closed. Mr. Albert R. Charles was elected a Fellow, and Messrs Chas. Sheather, of Marylebone, and Thos. Chesterman, of Whitechapel, were proposed, and the meeting adjourned.

Present fifteen Fellows and two visitors.

JAMES ROWE,
Hon. Sec.

LIVERPOOL VETERINARY MEDICAL ASSOCIATION.

THE usual quarterly meeting of this Association was held at the Medical Institute, Hope Street, on Friday, November 15th, 1878. William Whittle, Esq., President, in the chair.

There were present Messrs. Reynolds, Morgan, Elam, Moore, Watson, Stevenson; Townson, Lloyd, and Chisnall, of Liverpool; John Gerrard, Market Deeping; T. Greaves, P. Taylor, W. A. Taylor, S. Locke, E. Faulkner, and A. Prescott, of Manchester; W. Dacre, Altrincham; W. Woods, Wigan; J. H. Welsby, West Derby; James Moore, sen., London; W. H. Roughsedge and J. S. Menzies, St. Helens; H. Barnes, Malpas, James Storrar, Chester; P. E. Rothwell, Woolton, Lewis, Tarporley, and the Secretary.

Letters of apology were received from Professors M'Call and Axe; Messrs. H. J. Cartwright, T. Hopkins, T. Taylor, G. Heyes, E. Nuttall, W. A. Cartwright, T. Roberts, W. G. Schofield, M. J. Harpley, A. H. Santy, L. Butters, J. B. Wolstenholme, G. Carless, W. Lewis, and J. Lawson.

The minutes of the previous meeting were read and confirmed. Messrs. Stevenson and Chisnall, of Liverpool, and Lewis, of Tarporley, were unanimously elected members of the Association.

The committee of the Fleming Testimonial Fund gave in their report, and after considerable discussion the committee were instructed to confer with the committee appointed by the Lancashire Association, in order to determine what further action should be taken regarding it.

Mr. Gerrard then read a paper entitled "Remarks, Anatomical, Physiological, and Pathological, on Parturient Apoplexy," of which the following is a copy:—

Man has somewhere been said to be a gregarious being, that is to say, he loves to assemble in flocks. And it may be that, owing to this common infirmity, or rather common instinct of our nature, I am here to-day.

Certain it is that, whatever my motives may be, not being a member of your society, or indeed any other society, I feel that I owe you an apology or explanation for my appearance here.

Well, it is simply this. Some time in the month of last March, in writing a friendly letter to your secretary, I chanced to make some remarks on the "germ theory of disease in its relation to splenic fever." And he with that instinctive eye to business, which I suppose all secretaries of veterinary medical associations possess, suggested that I should write a paper on the subject, and come over and read it at your May meeting.

Pressure of business, no less than the intricate and abstruse nature of the subject, prevented me from complying with his suggestion, and he very generously gave me other three months. I found, however, that the progress of discovery in relation to this vital controversy was so rapid, the subject itself so extensive

and intricate, that I was compelled to give up the attempt. And that the more especially as it had been quite recently brought under your notice by one of the greatest lights on veterinary matters in these regions. For although men have speculated for thousands of years on the mystery of the origin of life, and although modern discovery and speculations have multiplied our means of being able to form a judgment on this subject, we seem as far as ever from an agreement; and it would seem but the result of a proper modesty on our part to stand aside until these intellectual gladiators and scientific *savans* have definitely discerned and described the movements of ultimate molecules, or the evolutions of living protoplasm from non-living matter.

As that arrangement could not be carried out, I began to think I was clear, but he, with that persistent determination said to be characteristic of his countrymen, continued to importune me so that at last I was obliged to yield to his solicitations, and choose a more homely and practical theme.

I find, however, gentlemen, that apart from his importunities, you had a claim upon me, I had read and heard your discussions, and partaken of your hospitality, so that I could not consistently refuse to try, at least, to repay you, by undertaking to introduce some subject if with no other object than to raise a discussion. For I presume that it is one of the main objects of such associations, not so much to instruct, as to exercise the mental powers, by placing a subject before the various minds who compose it, and thus enable them to *focus* the rays of light passing through the different *media*, so that truth may be attained by argumentative investigation.

But I can assure you, gentlemen, it was only after a great deal of hesitation, and not a little inconvenience on my part, with a persistent determination on his, that I undertook the honorable duty of occupying this place. I am too conscious of my inability to fill the place usually filled by authors, editors, principals, and professors, or to offer anything fitted to occupy the time or command the interest of an audience, accustomed to be fed on the cream of experience, or the teachings of philosophy.

I have no academic utterances to give forth, no minute microscopical observations to chronicle, but my remarks will be the simple cogitations of a hard-worked country practitioner on an important and by no means unusual pathological condition; a condition with which, I presume, a good many of you are familiar.

And my reasons for selecting this subject for your consideration are, first, because I have lately had an unusual number of cases of this disease; and, secondly, having had my attention

specially directed thereby to a new theory of the disease, propounded by that remarkable man, George Fleming, in his lately published work, 'Veterinary Obstetrics.' A man so untiring in his efforts for the good of the profession, and so encyclopædic in his knowledge, as to make one almost wonder if he eats, drinks, and sleeps like other men.

On the importance or utility of the subject I need not enlarge.

To all those engaged in country practice, and who often have to face the humiliating fact of frequent inability to cure, it is hardly possible to exaggerate the importance of a correct knowledge of the nature of this most interesting and frequently fatal malady. And even when viewed by the lights of physiology and pathology, its phenomena afford food for reflection and room for speculation to some of the largest minds engaged in the study of medicine, for it is at once one of the most abstruse and intricate conditions in the whole domain of pathological physiology; occurring as it does in the bovine female only, and only in certain well defined conditions in her, alike interesting for the frequency and fatality of the attack, no less than the suddenness of termination. And even, although by the lights of physiology and pathology, we may not be able to combat or cure such a complex condition as it is admitted to be, it behoves us all as men, claiming to belong to a learned profession, to know all we can regarding it, and be able to render a reasonable and intelligent explanation of its phenomena when called upon so to do. And no explanation can be considered reasonable or intelligent now-a-days, unless it accords with the Frenchman's dictum, "that no scientific theory can be considered complete until it is so clear that it can be explained to the first man you meet in the street."

Nor is it any reproach to our branch of medical science if we are unable to cope with this fell destroyer in the matter of cure; when we reflect on the many incurable conditions to which the human family is subject, with its more highly trained practitioners and investigators.

Think of the loathsome and awfully fatal malady of parturient fever in the human female, which seems to laugh and mock at all attempts to stay its deadly ravages.

The few remarks I shall have to make may doubtless be regarded by many practical minded men here as too theoretical. Without anticipating your conclusions, however, I may be permitted to say that there is too much of a prejudice in the present day against the man of theory, by men who glory in the euphemistic phrase of practical, and who sneer at all advances in pathology. It may be true of some theoretical men that they

do not succeed in practice as those who cannot theorise so well, but this only proves that there must be some peculiar idiosyncrasy in their mental or physical constitution, and by no means proves that a man who can take the most comprehensive views of the science of medicine and surgery cannot always put them in practice. Indeed if we examine the writings of the most eminent surgeons and physicians we shall find that they were eminent men of theory.

Cullen, some hundred years ago, makes some very appropriate remarks on this very subject. He says:—"Every one, now-a-day pretends to neglect theory and to stick to observation. But the first is to talk only, for every man has his theory, good or bad, which he occasionally employs; and the only difference is, that weak men who have little extent of ability for, or who have had little experience in reasoning, are most liable to be attached to frivolous theories; but the truly judicious practitioners and good observers are such as have the most extensive views of the animal economy, and know best the true account of the present state of theory, and, therefore, know best where to stop in the application of it."

If, as Herschel says, knowledge saves us from futile and inglorious effort, it widely opens to us ways of success which are closed to ignorance.

With the name "parturient apoplexy" we need not cavil, for I think it sufficiently indicates its nature in both symptoms and appearances, as borne out by the autopsies, that we think it as appropriate as any hitherto applied. True, we do not always find a serous and sanguineous effusion on nerve centres, but in fifteen cases out of twenty, if properly examined, we shall find such appearances as leave no room to doubt of its apoplectic nature; the principal question to settle being the cause of the apoplectic symptoms and appearances.

It may be necessary to state, however, that we exclude from this designation several states of a complicated character, occurring at and after parturition, such as metritis, metro-peritonitis, and the fever arising from such conditions, generally caused by wounds and bruises to the membrane lining the passages in the act of parturition. These run a different course and present different and well-defined symptoms and appearances. We also exclude from this designation the inability to rise or to properly use the hind extremities, frequently found after parturition, known as *adynamia nervosa generalis*, and arising from weakness or want of tone in the system; when debilitated from bad or insufficient food, and after giving birth to twins, rarely associated with fever or any brain symptoms, and generally amenable to treatment.

Limiting and defining our subject thus, we will pass on to consider the nature of "parturient apoplexy," viewed by the light of recent reasoning and research, and by facts furnished by experience.

The deductive method in medicine is fast giving place to the inductive. Hypothesis must give place to facts, and from facts we must rise to general inferences, if we wish to found pathological laws on a solid and enduring basis.

Before noticing some of the established facts in connection with this disease it may be as well to pass in review a few of the various theories that have been advanced regarding its etiology.

They are necessarily numerous, but we shall only notice a few of the most prominent, or those that have taken the greatest hold on the public or professional mind.

There is first the theory of debility or weakness.

2nd. The septic theory.

3rd. The anatomical theory, and

4th. The ganglionic theory.

First, the theory of debility or weakness. This is scarcely worthy of being called a theory, or of being brought under your notice. It is so called on account of the most prominent symptoms of the disease : the inability to rise or stand, but does not attempt to fathom the cause of this debility. I should not have brought it to your notice were it not that it has possession of the minds of a great number of people in the Eastern counties, and even some members and a Fellow of the Royal College of Veterinary Surgeons, and the theory they propound is only equalled in inanity by the treatment they prescribe—viz. to abstain from milking any animal for a day or two after calving, for say they—"If you milk them you weaken them and cause them to drop!" I never could meet with any one, either member or fellow, who could give any explanation of how the taking away of formed material in the shape of milk from any animal, especially when the gland is distended, could produce or account for any of the symptoms of this disease. Such treatment if extensively carried out would threaten the extinction of the bovine race ; for it is the principal object of the secretion, as destined by nature, to nourish the offspring, and if this be denied them, as it must be, if they carry out their theory, their numbers would assuredly decline and the survivors sadly deteriorate.

One can scarcely help wondering how such ideas could be seriously entertained, and it is astounding to think that at this time of day there should be a member or Fellow of the Royal College of Veterinary Surgeons so ignorant of the facts and well-recognised laws of physiology and pathology. Yet it is so.

In connection with this, and in contrast thereto, I may mention the procedure of a practical man. Most of you will have heard of a Mr. Fowler, a large importer of Alderney and Guernsey cows, which are regarded by some as very susceptible of this disease. Well, his preventative for it is to never allow the cows to go dry, but keep milking them right on to calving, and it is reported that he has never had a case since he adopted this plan.

Secondly, the theory of septicæmia.

This theory presupposes the development within the system of a poisonous principle, bacterial or otherwise, arising from the retained lochial discharges, or the retrograde metamorphosis of uterine tissue.

It is closely connected with the theory of fatty degeneration, lately propounded by an American brother, who described it as an immense development of fatty particles within the muscular fasciculi, so as to diminish the contractile power of the muscles; that after the expulsion of the foetus the uterine muscles are unable to contract sufficiently, and the retained débris goes on to putrefaction, which is suddenly absorbed and developed the disease. It is true that the muscular fibres of the uterus undergo, after parturition, a fatty metamorphosis, in consequence of which they almost all melt down and disappear, so that in the brief space of a week or ten days the whole again dwindles down and diminishes to nearly its original dimensions. It is a well-known fact a mare will conceive again, and as readily as at any time, on the ninth day after parturition. But this is a normal process, purely physiological in its origin, and takes place in all healthy subjects; and it so happens that in cases of this disease—parturient apoplexy—the uterus seems to be well advanced in this retrograde metamorphosis. So that it is evident we must look somewhere else for a cause. Nor does the theory of the development of a toxic agent within the system find any confirmation in the history, symptoms, or appearances of a typical case of the disease.

I confess that finding albumen in the urine on several occasions I was somewhat inclined to a similar view, but recent cases in which it has been absent have convinced me that it is by no means a constant factor in the disease.

Although it be always present in puerperal convulsions in the human female, and in connection with *para- and hemiplegia*—indeed is an acknowledged fact in obstetric pathology.

If the disease were of septic origin we should find it after difficult and first parturitions, where the traumatic lesions favour the development of *toxæmia*, and where albuminuria is a constant condition.

True, if we have a very fat cow down with this disease, we are less likely to get her up than one in fair or lean condition, but this I consider is owing to the want of tone in the system, or the deficiency of disease-resisting power arising from fatty degeneration of the heart, arteries, and other important organs, always present in such subjects. But, indeed, we rarely have a very fat cow down with this disease, unless her milking capabilities are well developed; and it is a well known fact that a cow having a tendency to lay on fat has little aptitude for the formation of milk. Our high-bred shorthorn cows very rarely go down with this disease, and in this connection I may state to you the experience of a shorthorn breeder of thirty years' standing. Robert Searson, Esq., late of Cranmore Lodge, Deeping, St. James, had a very good herd of short horns, and bred successfully for thirty years.

During all that time he never had a case of parturient apoplexy, his principal difficulty being the tendency to fatten and give over-breeding, as manifested in his best cows, and on the other extreme, a tendency to tuberculosis, arising from prolonged lactation.

Before he began to breed pure shorthorns he was very much troubled with drop after calving, and after he gave over—some years ago—he had a return of the old visitor. These facts, I think, prove pretty conclusively that the fatty degeneration theory “will not,” as a critic remarks, “hold water.”

Nor is Professor Layman more happy in his explanations of his theory when he stated that the symptoms of the disease in the early stages “are due to phlebitis or thrombosis,” and that “the desintegration of the clot and the discharge into the circulating medium of this product” is the true and only source of the disease.

If this were “the true and only theory” of the disease, very few parturient animals would escape, for the involution of the uterus by fatty degeneration is a phenomenon in all. And even although phlebitis and thrombosis might occur in some—for it is by no means proved that it takes place in any of our patients—we have no *phlegmasia dolens* in them; it does not follow that septicæmia must follow as a consequence. Nay, rather we should expect embolism and its attendant evils. But I must hasten to notice the “anatomical theory of the disease.”

The propounders of this theory endeavour to explain the reason why this disease occurs only in the bovine female, on the ground of anatomical peculiarities in the blood-vessels entering the cranial cavity, which they assert is the only true explanation of all the phenomena attending it. Unfortunately they differ very considerably in the descriptions of the anatomical relations and dis-

tribution of the cerebral blood-vessels, as well as the phenomena that such peculiarities give rise to. For while one—Professor Walley—asserts that “the increased supply of blood to the brain of the cow, with its easier method of ingress (the flow of blood to the vertebrae being almost one *uninterrupted* and *straight* course), with the shorter neck, and greater voluminity of the internal organs of the animal, is sufficient to account for it in the cow, and the reason why the mare is comparatively exempt from it.” The other maintains that “the cow has no single large vessel entering the cranial cavity, but a number of small vessels, which break up into a cluster of capillaries, or network known as the *rete mirabile* of Galen, these re-unite to form the arteries of the brain proper, and that, in consequence of this arrangement, the arterial supply of the brain is very uniform, and any irregular pressure on the aortic system is only slowly transmitted to the arteries of the brain. But if this increased pressure be long continued œdema of the brain results, which is followed by *acute anæmia*, which Mr. Fleming maintains is the pathological condition of this disease.

In short, while Professor Walley maintains that the easy ingress of blood to the brain of the bovines gives rise to congestion, extravasation, and coma, Mr. Fleming maintains, with an elaborateness of reasoning and experiment unequalled in our literature, that in consequence of this complicated arrangement of the cerebral blood-vessels, and the difficulty of influencing the circulation through them anæmia is induced. So that you see the phenomena differ widely, as well as the *modus operandi* by which it is brought about.

Now, gentlemen, I desire to speak of all great authorities with respect, and that the more especially when we are under great obligations to them; and to no one in the profession are we more indebted than to Mr. Fleming. We owe him a deep debt of gratitude; a debt I am afraid we shall never be able adequately to pay, but we cannot allow our gratitude or our admiration of his genius to warp our judgments and cry “Amen” to his every conclusion.

Well, in this matter he adopts the German theory of Franck, viz. that it is an *acute anæmia* and sudden loss of brain power which accounts for the symptoms of this disease. His mind is evidently an eminently deductive one, for he starts from a mere speculative opinion, and then sets his great powers to work to fish in the troubled waters of physiology for facts to fit it. To read his essay on this subject is a grand intellectual treat, for in it we can see to what an extent a well-trained mind can reach in its comprehension of disease processes, without, perhaps, ever having seen a case. The position he maintains is this, “given

a certain amount of aortic pressure and the parturient state, and this condition of acute anæmia must result, and in consequence of this *peculiar* anatomical peculiarity.

This anatomical peculiarity is a physical and mechanical arrangement for the purpose of modifying the rapidity of the flow of blood, and the type of it is that of an artery suddenly divided into a cluster of capillaries which re-unite to form a single vessel. Chauveau says of it that it relates to the circulation of the brain, that it would appear to be formed on the carotid and vertebral arteries of animals, which, in a state of nature feed from the ground; the object being to furnish an equable and prolonged supply of blood without the risk of check or hindrance, and thus to obviate the tendency to congestion of the brain during the dependent position of the head.

But this description would apply to the horse, for in a state of nature, and even in his domesticated state, he feeds from the ground, and it is not found in him; moreover, he stands farther from the ground than any of the other domesticated animals, and when grazing the head is much more perpendicular than either, so that, if this arrangement be necessary in the ruminants to enable them to feed without congestion of the brain being induced, it is doubly necessary in the horse. Further, we must remember that solipeds are monogastric animals, with large intestinal development, and which require a much longer time to gather and masticate their food than the polygastric ruminants that can hurriedly gather up their provender and lie down to chew at their leisure, consequently the solipeds most require this complicated cerebral arrangement of blood-vessels, if this is its object. But with all due deference to the opinions of such great men, I take the liberty of questioning the correctness of their conclusions, and of stating my reasons therefor.

Every one, I presume, will be prepared to admit that in the arrangements of nature there seems to predominate evidence of benevolent design and operation. Now we judge of the design of a contrivance by its predominant tendencies and effects. If evil were to result as often as good, we could not decide whether the design was benevolent or not, but if we find that the benevolent effects of any natural contrivance are so obvious and outweigh any evil results, we are compelled to admit that the design is benevolent. The law of gravity is essential to the preservation and comfort of the world. Yet it frequently gives rise to frightful accidents to men and animals.

In the animal frame we find a multitude of organs, nearly all of which are obviously adapted to a particular use. Now the anatomist cannot lay his finger upon one of these and say, this was intended to produce derangement and pain in the system.

Here is a muscle contrived to clog the operations of its neighbours; here a blood-vessel adapted to corrupt the blood and produce disease; here a gland whose object is to secrete a poisonous fluid to contaminate the whole system; here a nerve made to produce pain; here a plexus of vessels suited to bring on disease. Nay, the anatomist perceives at once that all the organs of the animal system and their collocation are fitted in the best possible manner to produce health. Nay more, that there is nothing superfluous in the animal economy, nothing in vain.

Such being the case, we are led to ask what can be the object of this peculiar arrangement of the cerebral blood-vessels of ruminants, for we have seen that it must be benevolent?

Now it is obvious that the principal object observed in the formation and functions of the lower animals is the preservation of the species, and for that purpose they are fitted by nature with organs of offence and defence best suited to their various habits and requirements, and thus maintain the balance of organic nature.

In a state of nature solipeds depend for their safety on their power of flight—hence their structure. The small stomach, the single digit, and the guttural pouch, found only in them, the function of which seems to be to assist the sense of hearing, all tending towards the same benevolent end—viz. the preservation of the individual by flight.

The ruminants, on the other hand, depend for their safety upon their heads and horns—hence the immense development of the latter, and hence, as I think, the peculiar arrangement of the vascular supply to the former.

If this be not the object of it, it is more difficult to reconcile it with the theory of congestion, from the dependent position of the head, seeing that solipeds hang their heads more in the gathering of their food, and have no such arrangement.

Moreover, it is better developed in the sheep and goat than in the ox tribe. And these are better suited to live in glens, and on rocks and mountains in their natural state than the ox tribe; and this special arrangement of the circulatory system enables them to do so with greater safety by equalising the blood supply to the organ in which consciousness resides.

Nor is this the only organ in which anatomists find this special arrangement of the circulatory system. We find a type of this in the vascular pouches called the *glomerules of Malpighi*, and something similar in the *vena porta*. The blood furnished by the *cœliac axes* and the mesenteries to the organ of digestion is brought back by a number of veins into a common trunk, called the portal vein, which, instead of emptying immediately into the *vena cava*, is distributed in the liver in the

same manner as an artery, and forms the afferent vessels of the liver, the capillaries, and finally the efferent vessels, or hepatic veins, which flow into the *vena cava*.

The object of this is evidently to slacken the flow of blood, and to increase the surface of transudation. But we must pass on to notice the reasoning by which this anatomical theory is supported.

Notwithstanding the number and elaborateness of experiments and physiological laws adduced in support of the anæmic nature of this disease, not one single proof from autopsies has been produced, if it is possible to discover or demonstrate an anæmic condition of the brain *post-mortem*.

All practical men agree in considering it a matter of great difficulty to reconcile with any certainty the morbid appearances found in the brain with the symptoms observed during life. Many die with undoubted apoplectic symptoms when nothing has been found but congestion of the vessels of the scalp, the membranes, or the brain itself, and sometimes not even that, but if it were of an anæmic nature from any cause it should be determined more easily.

Anæmia is ordinarily recognised by the blanched and bloodless condition of the system generally or of the organs involved. I have sometimes thought that the brain and nervous system in this disease presented a normal appearance, so that one might be led to infer that such might be the condition inducing these symptoms. But latterly I have found well-marked cases of congestion, extravasation, and even clots, on the brain, and congestion of the meninges, so that I am inclined to question the correctness of the anæmic theory. Mr. Fleming, however, maintains that this very congestion we find is the result of the hyperæmia leading to œdema, and when this occurs anæmia sets in, in consequence of the œdema causing contraction of the blood-vessels, and prevents the further supply of arterial blood to the brain; this is aided by the heart's hyperplasia and the hydræmia which, he says, exists in all pregnant animals. Well, I am not prepared to maintain that anæmia does not occur under such conditions, and that it is not the pathological conditions present in parturient apoplexy. But I humbly submit that we would require better proof than that afforded by experiments on living animals in the production of epileptic attacks and spasms, arising from an anæmic condition of the brain induced by bleeding an animal to death, or the injection of water into the carotids, as performed by Bidder and Mienk in the production of *eclampsia*, before we can accept it as the cause of the phenomena observed in this disease, or the true theory thereof. A theory to be true must be consistent with the

undoubted facts of the disease, and with the established principles of physiology.

Now, if congestion of the brain and this attendant phenomena of acute anæmia can occur in ruminants, with a special provision as it were against it, why does it not occur in solipedes where the vascular arrangement is such as to allow of a more rapid ingress of blood to the organ?

In the mare the process of parturition is suddenly accomplished in natural labour, and the involution of the uterus more rapid even than in the cow; therefore, according to the theory of aortic pressure and anatomical conformation, we should expect to find congestion, œdema, acute anæmia, and all its attendant phenomena in her, but we do not.

Nor do we find parturient apoplexy in the ewe, even although she possesses the anatomical peculiarities of the cow in a more pronounced form, and the parturient process quickly and easily performed. Even in the sow, where Mr. Fleming says the *rete mirabile* is greatly developed, I have never seen, nor heard, nor read of a case of parturient apoplexy bearing any resemblance to that in the cow. Indeed, I never knew that it did occur in them until I read it in the 'Veterinary Obstetrics,' but this you will set down to my having seen little pig-practice. Not so, however, for I live in a pig-producing county, and have a fair amount of parturient practice in them, and I have never seen a case.

I may mention that I have frequently seen in them what he says Ellenbesger and Wöstendorf designate "*parturient eclampsia*," where the appetite is lost, persistent lying and refusing to allow the young to suckle, elevated temperature, bowels constipated, and the suppression of the lacteal secretion, but I never saw any convulsions, or loss of sensibility, or anything approaching the *eclampsia* of women as described in the Rosenberg-Traube theory.

And, again, it is a well-known fact that in cows killed while labouring under this disease the blood is very plastic and very plentiful, so that the statement that it is hydræmic in them and conduces to this disease requires some qualification or explanation; for the appearance it presents suggests the idea that it has been flowing through the body without being properly deprived of its arterial character, instead of being more diluted by the pregnant state, expressing the existence, as it were, of an extensive vaso motor paralysis.

The blood of the mare may, I think, be considered more watery even than that of the cow, if we may judge from a comparison of their milk, and this, taken in connection with the fact of the parturient act being more rapid and easy in the former, goes far to show that parturient apoplexy would be more likely to occur in them if the anæmic theory be true. And

that the more especially when we consider the ready influx of blood to their cranial cavity in comparison with the special arrangement found to exist in that of ruminants.

The involution of the uterus is as speedily accomplished in the mare as in the cow ; consequently, the aortic pressure must be equally great, and even greater if we take into account the sizes of the two mammary glands, and the quantity of blood going respectively to each of them. From this it follows that, if acute anæmia be induced in the way he describes, and if it be the condition of the brain producing collapse, or parturient apoplexy, we have all the necessary conditions for its production in the mare, and in greater abundance even than in the cow. Indeed, all the conditions he sets forth as existing in the cow and favouring its production in them, such as hyperplasia, hydræmia, the superabundance of blood thrown back on the system by the quick contracting uterus causing aortic pressure, the high condition, and even the teleological conditions, are all present in the mare, and we do not meet with it in her.

No one can doubt or disbelieve the large array of physiological facts tending to show that a reduced flow of blood to the brain will lead to unconsciousness and loss of volition, or that epileptic attacks and spasms may arise from brain anæmia, but because anæmia of the brain will give rise to these symptoms, it does not necessarily follow that parturient apoplexy or collapse is produced by anæmia, unless it be admitted that the condition of serous and sanguineous extravasation, frequently found on the brain in this disease, is an anæmic condition.

If this be admitted or can be proved, it will alter very materially our views regarding the apoplectic condition, for it is very generally—indeed universally—regarded as the result of sudden pressure on the brain substance. Magendie has shown that a very slight degree of pressure on the brain was sufficient to deprive an animal of consciousness, and that the moment pressure was removed the animal woke up again. But the lesions found in persons who die from apoplexy vary much. Sometimes the evidently congested state of the brain during life leaves no trace visible after death. Such cases have been described as—“Nervous apoplexy” (Sandras).

But when one finds well-marked appearances of serous and sanguineous effusion into the brain cavity or ventricles, it is more in accordance with physiological facts to regard it as apoplexy from pressure than from arterial anæmia.

But Mr. Fleming admits, indeed brings forward evidence, that anæmia can be brought about in quite a different manner, and that according to the dictum of a celebrated physiologist, an animal “can bleed to death in its own portal vessels.” For the

proof, I must refer you to his great work, and can only say that anæmia brought about by such conditions would be evident by the absence at all times of congestion or effusion in the cranial cavity. Nor do we always find these even in fatal cases, or cases that would have proved fatal if allowed to live sufficiently long. If effusion were extensive, recovery would be at all times impossible, and the extent of the extravasation makes, I think, all the difference in the cases we have to treat.

Closely connected with this condition of brain-anæmia is the subject of sleep and narcosis arising from the administration of chloroform and ether.

To account for these conditions of the system Mr. Fleming adopts the usually received theory of anæmia as the conditions existing in them; but this, too, has been called in question no later than last year by a Dr. Kennedy, of Dublin, in the *Dublin Journal of Medical Science*. In it he states his views, based on actual observation. He says:—"A man of middle age whilst drunk had his skull severely burnt at a lime-kiln, where he had fallen asleep. In a short time very urgent symptoms of pressure appeared, and he was trephined over the centre of the parietal bone. Subsequently the opening was enlarged and the brain exposed, the dura mater having been removed to allow of free vent of pus. Whilst in this state I had the dressing of the case for several weeks, and plenty of opportunities for seeing the patient both asleep and awake, and I never saw him asleep that I did not observe marked congestion of the vessels, more particularly what seemed to be the veins, whilst all the vessels visible assumed a dark hue; and when the patient awoke it was very interesting to observe, first an increase in the rapidity of the circulation, and then a change in the colour of the blood, and it sometimes seemed as if new vessels, or at least some not seen before, had made their appearance." Now these views are adverse to Durham's views, and which Mr. Fleming adopts.

They are—that "during sleep the brain is in a comparatively bloodless condition."

Kennedy, too, contests the opinion of Hammond in reference to the state of the fontanelle in infants, who says that "the anterior fontanelle was always depressed during sleep, and elevated during wakefulness." While Kennedy found, during a series of observations extending over two years in the Rotunda Hospital, that whether the infants were sleeping or waking, no appreciable difference could be observed, and he could only detect a distinct elevation in two, and both these infants were crying lustily."

But I must not waste further time by looking into any more of these side issues; but as these states and conditions of the brain

were alluded to by Mr. Fleming to account for the symptoms observed in the disease under consideration, I thought it better to show that on them even there was very great difference of opinion, and that anæmia does not play such a rôle in the production of these conditions and diseases as has hitherto been assigned to it. And further, that granting anæmia to be the physiological condition in the disease, the anatomical peculiarity existing in the cranial blood-vessels of ruminants contributed nothing towards its production; nay, rather that it tends to prevent it by equalising the circulation, and thus preventing congestion of the organ and its consequences.

It is very difficult indeed to see how it could bring about anæmia in the way indicated by Mr. Fleming, nor does he make it very evident how anæmia occurs at all through this arrangement.

The following, he says, "seems to be the result of the peculiar distribution of the vessels:—1st. The circulation of arterial blood to the brain is very uniform. 2nd. Irregular pressure in the aortic system cannot easily, and then only slowly, be transmitted to the arteries of the brain.

"Now, however, Bidder's experiments have shown that sudden increase of blood pressure does not produce any comatose symptoms, but that these always set in if the increased pressure is of any duration. Under these circumstances, brain œdema is much more likely to set in than if the blood pressure were to disappear quickly."

Now the question to be asked and answered here is, Where does this increased and prolonged blood pressure take its rise, and how is it sustained?

It cannot certainly be in this *rete mirabile*, or an artery suddenly dividing, without altering its normal dichotomous disposition, and then gathering itself up again. The effect of this is evidently to slacken and slow the circulation, and if the *vis à tergo* be removed or weakened, this peculiar arrangement will respond in accordance with the constitution of all arteries, and which is but a physiological result of the struggle between the two elements composing the tube, the elastic and the muscular.

The increased pressure must take its rise from the heart's hyperplasia, the increased quantity of blood returned to the circulation, and the parturient state conditions present in a greater or less degree in all animals.

Unless we suppose, for he does not avow it, he believes that the amount of blood or fluid circulating in the brain is an unvarying quantity, and that in consequence of this dilatation or diverticulum on the carotids of ruminants the blood is held back for a time, and rushes into the soft brain tissue after the *vis à*

tergo is removed, and thus produces congestion, œdema, anæmia, and death. I cannot see how the theory can be seriously entertained, for it is devoid of physiological or pathological facts by which to maintain it.

Professor Williams well and tersely remarks of the anatomical theory that "it is upset by the fact that the disease is inseparable from domestication and stimulating food peculiar to deep milkers, and scarcely ever succeeding difficult parturition, which most assuredly would be the case if shortness of neck, excessive natural vascularity of the brain and its membranes, were predisposing causes.

I shall now direct your attention to the ganglionic theory of the disease, a theory which Mr. Fleming says is "the most far-fetched of any," and in proof of his statement says that the nerve of the intestines is a vessel nerve, and if it were to be paralysed the vessels of the intestines would be paralysed also, which would clearly appear on dissection." But, indeed, this is just what occurs, although not to the extent as to be seen on every case of dissection, but in a similar proportion to the other parts paralysed. And not only are the vessels affected in their smaller branches, but the intestinal muscles also, which are principally under the control of the system. If they are not so, why this distressing tympanitis and antiperistalsis of the œsophagus, which often converts a hopeful case into a fatal one. "None of the symptoms of this disease," he says, "favour the belief that the sympathetic system is affected. I most thoroughly favour the belief that the sympathetic system is affected." I most thoroughly believe that all the symptoms of this affection point most conclusively to the primary disturbance occurring in this system of nerves. Not only does the system preside over and control the vascular supply of the intestines, but it is the vessel nerve of the whole body. It governs all those motions which are purely involuntary, and its centres are believed to be the seats of those faculties we call emotional and instinctive, from it the heart receives its motor impulses, the vagus being a moderating nerve of that organ.

Branches of nerves from the ganglionic centres accompany every artery throughout the body to its termination and without the direction of the will regulate the contractions and dilatations of the blood-vessels to their most refined distribution. If this supply be cut off by divisions or impairment of functions of the ganglionic nerve of a part, the vessels become paralysed, and become dilated with the flowing blood.

When certain physical impressions are made upon the organic nerves, the disturbance of their supply is indicated by distant phenomena; the blush which mantles, and the pallor which over-

spreads the cheek under the influence of mental emotion or shock, are phenomena of this order. The effect of mental emotion on digestion, biliary, and lacteal secretions are well known. And as the late Professor Barlow says, "Why should not the powerful excitement of parturition in some similar way affect the cow, producing among other derangements arrestment of lacteal secretion; an event, by whatsoever means effected, directly or indirectly, eminently mischievous.

The functional importance of this system of nerves is proved by the fact that in the very lowest class of animals, where preservation and propagation of their own species is their only function, it is the only system existing, and it is only as we rise in the scale that this primitive nervous chain becomes connected with the fibres of the more highly developed nervous system. But even in the highest development—man—the primitive chain remains, and although connected by their fibres in different parts, they are still distinct both anatomically and functionally.

A system so universal and so important to all the functions of organic life cannot but be implicated in such a disease as this; when we reflect that the principal function in the only animal in which it occurs, is to produce that complex fluid called milk, at once the most typical and most universal food, elaborated from the store-house of nature. And further, when we reflect that in order to produce this fluid a large development of this system is necessary; and it has been proved that during pregnancy, not nerves only, but considerable ganglia, previously not perceived to exist, are apparent in the vicinity of the uterus and mammary glands.

If, therefore, the sympathetic system be interfered with, as it undoubtedly is, other vessels than those of the intestines would be paralysed, other and very important functions would be suspended or interfered with. And, indeed, this is just what we find in this disease, the interference or suspension of nearly all the important functions of the body, especially secretion, excretion, volition, and motion.

It is evident that all these functions are interfered with, the functions of some part of the nervous system is either wholly or partially suspended; in short, we have what is known as paralysis. But, indeed, Mr. Fleming admits "that in the course of the disease there is paralysis of the vagus," but the vagus is not of the sympathetic, and the question arises how does this paralysis occur. This, I think, is the principal difference between us, but it is a difference that lies at the root of the matter.

Is the paralysis centric, arising from the brain lesions of anæmia or extravasation, or is it reflex arising from some peripheric excitation.

I have already indicated my opinion against its being centric, or commencing in the brain, from the sudden rush of blood thereto, either by anæmia or extravasation; I shall now briefly indicate my opinions for thinking that it is eccentric, or originating in the ganglionic system.

The first proof that it is of an eccentric nature is the fact that the paralysis is of a progressive type. We never find any cases of this disease corresponding to an apoplectic seizure of the human being. No, the first stage of this disease is that of excitement, the blood-shot eye, the excited look, the throbbing heart, the heightened temperature, occurring at or soon after the act of parturition, give evidence of dilatation of blood-vessels following upon the reduction of nervous control. Now what causes this dilatation of blood-vessels? Deficiency of nervous influence, induced by the excitement of the act of parturition, and the recoil of the ganglionic system from its attempts to rid the system of its superabundant nitrogenous element in the shape of milk. As a rule you will find—at least I have always found—that the secretion of milk is very abundant at first, or in the first stage of vascular excitement. What more common to be shown or told of the great bucketful of heastings they got from her as soon as she was calved, and of the great surprise they experienced when some six or more hours after they could not get a drop.

But by this time the eye begins to dull, the heart begins to flag, the temperature to fall, she begins to lift her hind legs spasmodically, and perhaps, stagger when made to move, showing that the function of the spinal cord is interfered with. By-and-bye, the co-ordination of muscular movement is seriously impaired, and she staggers and falls, perhaps to rise no more, but not always.

This stage occurs in about from twelve to twenty hours, if the cow is of an excitable temperament and a very heavy milker in high condition. When newly fallen if we prick with a pin or pen-knife in the posterior extremities you will find sensation gone, but as you advance up the spine you will be able to make her feel, and perhaps start up, only to tumble down again. Now the breathing begins to be excited and short, depending a good deal on the condition of the stomach; the eyes get duller, the temperature of the body low, and sometimes great uneasiness is manifested, and attempts to rise are frequent and ineffectual.

Now, in all this we have only a gradual and progressive interference with function. Apoplexy—in the ordinary sense of the term—as yet we have not. Gradually, however, the outworks are sapped and surrendered, and at last, perhaps, the citadel is

reached ; and fearful havoc made in the garrison, as indicated by the pendulous head persistently turned to one side, or unconsciously dashed about ; the amaurotic eye suffused with tears, which frequently run down the cheeks ; stertorous breathing, general insensibility to all stimuli, and the complete loss of all voluntary muscular power, in short, the carcase lies a mere log, dead in all the organs except the one having its motor supply from the nervous system of organic life—the heart ; it is always the last to yield.

This is apoplexy as I have observed it, and it is no fancy picture or fictitious case I have sketched. Such cases are of almost weekly occurrence with me, and at all seasons, for I do not believe that temperature has anything at all to do in its production. Indeed, I have as many in the months of December and January as in June or July.

All cases, however, do not go on to apoplexy, but the apoplectic stage is generally reached before we are called in, and indeed before the animals are observed to be ailing ; unless the owner may have had frequent losses, causing him thereby to watch them closer. But of all cases that I have watched from the commencement this has been the course of the disease, which convinces me that we have no sudden case of collapse, commencing at the brain, induced by aortic pressure or anatomical formation, either anæmic or congestive, but that it is of a progressive type commencing at the periphery and gradually reaching the centre.

We have seen that all the minute blood-vessels at the extremities of the circulation are under the control of the ganglionic system of nerves ; we have seen also that they are the principal nerves presiding over nutrition and secretion—notably so—the secretion of milk. Now, it is a well-known law in the animal economy that whenever there is a great excitement in the system it is succeeded by a corresponding depression. Upon this fact in physiology hangs, I think, the explanation of this theory of the disease.

The first stage of this disease is characterised by excitement of the udder. There is a determination of blood to it by what is known as sympathetic action. However we may theorise and speculate on aortic pressure, undoubtedly the great volume of blood finds its way to the udder, even before the act of parturition commences, and always before it is concluded. Now this is most noticeable in heavy milkers, and it is in them only that we have the disease ; and where the ganglionic system is largely developed.

The excitement of the parturient act is followed by a copious secretion of milk, but in consequence of this very copiousness of secretion and the peculiar susceptibility of the ganglionic system

to take on morbid impressions, there is a reaction or recoil in it, and the functions of ganglia are suspended.

The effect of this disturbance of ganglionic function is to cause dilatation of the peripheral vessels, especially the vessels of the udder; the blood now rushes into the uncontrolled vessels, giving rise to the stage of engorgement. With this disturbance of power in the vessels of the udder more disturbance is set up in the other organs; through reflex action excitement of the whole system is visible, and soon the diminished action of the spinal cord is apparent in the deficient power of co-ordination of muscular movement in the posterior extremities, and by the influence the cord is known to exert upon the heart through the sympathetic system.

The peculiar action of the cord in increasing the force and number of the pulsations of the heart, through what is known as the *nerve of Cyon*, by means of which the heart produces a reflex action, which causes the organs of the peripheral circulation to dilate, and consequently enables it to diminish the number and energy of its efforts. And this we find is what occurs at this stage of the disease.

This, I believe, is the explanation of the brain symptoms, effusion arising from the paralysing reflex action of the nerve of Cyon; the depressing nerve of the circulation producing depletion of the heart, and consequently diminution in the pressure of the blood, in general evidenced by the lowered temperature which now is present, and feeble beat of the central organ of the circulation, with coma, and most frequently death, when this stage is reached.

In short, we have first excitement of the gland through the sympathetic action, ending in increased secretion of milk. 1st. stage. This is suddenly almost succeeded by engorgement of the gland through a reflex action of the ganglionic system allowing of the dilatation of blood-vessels, assisted by the increased amount of blood thrown back upon the system by the rapidly involving uterus, and consequently an arrest of secretion. 2nd stage. The functions of the cord are interfered with through the reflex action of the hypogastric or lumbar plexus, hence the loss of co-ordination of muscular action in the posterior extremities. 3rd stage. This is succeeded by the peculiar action of the nerve of *Cyon* upon the peripheral circulation excited through the heart effusion into or on the soft brain tissue. 4th stage. This may be succeeded by permanent loss of brain power and collapse, or resolution, if the excitement has not been too strong or the effusions too extensive.

Such in brief are my conclusions on the nature and cause of this disease. They are founded on practical observations and

sanctioned by the well known laws of physiology and pathology. Instead of being "far-fetched," as Mr. Fleming maintains this ganglionic theory is—it is the only one that, in my humble opinion, most directly and simply meets the requirements, and accounts for all the phenomena of this complicated condition of the bovine female.

In these days of germs and bacteria, we are too apt to look beyond the system for some particular entity as the cause of disease—that was created and has been living on in the by-past eternity, and that will continue to live on in the eternity to come—and to forget that after all, what we call disease is a natural although an abnormal condition of the body, that in fact pathology is a department of physiology, and the phenomena of disease result from the action of the normal structures and forces of the body, only modified by morbid conditions.

In conclusion, Gentlemen, I have to thank you for your kind and unwearied attention, for wearied some of you no doubt must have been, listening to this dry, and it may be to some of you, somewhat unpalatable harangue. If I have wearied your patience, I crave your indulgence, and hope you will have your remedy in the host of objections you will be able to raise to some of the ideas advanced, and the criticisms submitted, so that a good and profitable discussion may be envolved, truth may be attained, science advanced, and you and I may find our award in the consciousness of having done, or tried to do our duty.

Mr. P. Taylor complimented Mr. Gerrard on the ability he had displayed in the production of such an excellent paper—the subject was a very interesting and important one to every veterinary surgeon, and their thanks were due to Mr. Gerrard for the very scientific and practical manner in which he had treated it. The paper was one, which it would have been an honour to any professor to have brought before them. He concurred, generally, with the views propounded by the essayist, and hoped that they would have an opportunity of reading it in the journals—where, by a careful study of the theories he had advanced—they would be able to derive more benefit than it was possible to do by merely having read it once.

He then gave a brief summary of the symptoms of the disease, and the general course of treatment pursued by himself—he had seen much of it, and he had treated them in every manner and way, but he could not say that he had been much more successful with any one mode of treatment than with another.

In the first stage he gave purgatives combined with stimulants and nerve tonics. He never gave any medicine in the comatose state, as he considered it dangerous to do so. He applied externally, stimulants, hot cloths, and the smoothing iron to the

loins and abdomen; kept the cow on her sternum, fixed her horns to the stall, drew off the milk frequently, and emptied the bladder and rectum at short intervals. But when you have done your best, he said, you will often be disgusted at your want of success in treating this disease. Treatment to be successful and satisfactory, must be preventive. He was in hopes that the essayist might have discovered a cure for it.

Mr. Storrar said that his own opinion of the pathology of this disease, was thoroughly at one with the theory enunciated by the essayist, and agreed with *Mr. Taylor*, that our principal aim—where this disease was prevalent—should be directed towards its prevention. In his own practice he gave stimulants and purgatives, of the former he preferred ammonia to alcohol, as he considered that the sedative reaction of alcohol was detrimental in this disease. 1st. Because it was safer to administer, and 2nd, because it went directly into the rumen where it was wanted.

Mr. Moore, sen., said that he had not given purgative medicine either as a preventive or a cure in this disease for twenty years—the bowels are only paralysed, and if you restore the nervous system, the muscles will soon act. His practice was to give *Aconitum* and *Belladonna* alternately, in the first or excited stage. If tympanitic, he gave *Ammonium Causticum*, and in the comatose stage he gave *Arsenicum*, and when the animal began to recover he administered *Nux Vomica*. He had tried galvanism, and found that by applying it across the loins, he could disperse the gas in the stomach, but he had experienced difficulty in applying it effectually in this disease.

Mr. Stevenson said he had also tried galvanism in the treatment of this disease, but he had failed to do so effectively or even with any result in the comatose state.

Mr. Barnes said that he agreed with the essayist as to the pathology of the disease, he had seen a great many cases of the disease, and had been fairly successful in the treatment of it, his recoveries being about 50 per cent. His practice was to bleed in the first stage, to administer stimulants combined with slight aperients, and to apply stimulating applications to the spine, and a severe blister to the pole. He attended to the animal, generally, as spoken to by the previous speakers. He had, however, often experienced great difficulty in getting the cows up after the disease had subsided, and related some cases where the muscles of the hind quarters were almost a mass of degenerated tissue.

Mr. Elam thanked the essayist for the time and trouble that he had bestowed upon his paper, and hoped that he would agree to allow it to be published in the journals. In his own practice, for this disease, he had formerly tried purgatives, but he now mainly depended on the administration of stimulants, principally *Ammon.*

Carb. The bowels, he thought, acted better by the administration of this medicine than by any other he had tried. He attended to the animal generally, as referred to by the other speakers, only he applied ice or cold cloths to the pole. He had also experienced the same trouble of getting them up after the acute stage was passed, as Mr. Barnes had referred to. As a preventative he kept them short of food, and gave them *Ammon. Carb.*, both before and after calving.

Mr. Woods said that from his own observations and experience of this disease he was inclined to think that there were some local causes, such as climate, &c., which had considerable influence in producing this disease, as there were some districts in which it was very prevalent, and others quite contiguous where it was scarcely seen. He had for a number of years devoted his attention principally to its prevention, and, he believed, with good results. He recommended *Ammon. Carb.* to be given both before and immediately after parturition.

Mr. Welsby concurred in general with the views of the essayist, but he could hardly reconcile the practice of administering ammonia previous to parturition as a preventive recommended by the previous speakers with the opinion that the disease never follows difficult cases of parturition. He preferred keeping them on low diet, moderate exercise, and the administration of mild aperients. If the cow has a morbid appetite, bed her with sawdust, or put a muzzle on.

Mr. Morgan said he had not seen very much of this disease, but he agreed generally with the view taken by the essayist, and considered that improved breeding, and artificial rearing were the principal causes of this disease, as among animals in the wild state it did not occur. They were much indebted to Mr. Gerrard for his excellent paper, and hoped that he would accede to the request of the members and allow it to be printed.

Mr. Dacre, like the other members, expressed the pleasure with which he had listened to Mr. Gerrard's paper. He then criticised Mr. Moore's treatment, and said that he had come to the conclusion from his own experience that the less medicine you administer in this disease the better. He then related a very aggravated case in which he administered no medicine, attended carefully to the animal, turned her over, relieved the tympany by hot cloths, &c.; the animal recovered very satisfactorily.

Mr. Reynolds spoke in terms of appreciation of the paper, and agreed in the main with the opinions propounded in it. He would like to have the essayist's opinion as to whether allowing the calf to suck was beneficial or otherwise, as its presence in some and its absence in others caused great excitement in the cow.

Mr. Townson, after complimenting the essayist on the production of such an excellent paper, said that in his own practice he bled in the first stage, but if the cow was down he did not bleed, but administered a mild purgative, combined with stimulants, such as brandy, whiskey, or the salts of ammonia, and attended to the animal otherwise as referred to by other speakers.

Mr. Watson and the *Secretary* also complimented the essayist on the ability he had displayed in bringing before them such a clear, philosophic and scientific paper on such an important subject, and concurred with the wish expressed by the other members that he would allow it to be published in order that they might have a better opportunity of examining it.

The President referred to the breeds of cattle most liable to parturient apoplexy, the pure breeds, with the exception of those principally bred for dairy purposes, being most exempt. In reference to the age at which the cow was most liable to it, his own experience was that about the fourth or fifth calf, while some other members considered that the third calf was the most likely time. He concluded by thanking *Mr. Gerrard* for his very able paper, and asked him in his reply to favour them with his opinions on the treatment, as that had occupied a prominent part of the discussion.

Mr. Gerrard said that, although he had spoken to them at great length, he had said nothing as to the treatment of the disease—this they would readily understand as the therapeutics of the subject did not fall within the scope of his paper. But as some of the members appear to be anxious to know his experience on that point he could not do better, perhaps, than indicate his procedure in a case.

In the first stage of the disease, or before the cow is down, I administer a stimulant—Brandy half a pint, *Ammon. Carb.* two drachms, water half a pint; repeated every hour or even oftener, according to the nature of the case, I find the best. Rub a strong ammoniacal liniment along the spine and across the loins, cover with a rug, blanket, or sheepskin, if procurable. A good smart purgative administered at this stage does more good than when the animal is down and unable to swallow, when it frequently does harm, however administered. It is of consequence to keep as quiet as possible at this stage, and avoid everything tending to excite the animal, such as the removal of the calf, or allowing it to remain if its removal leads to excitement.

I may here state a practical fact that is regarded by many as an exciting cause of the disease, but which I find is not so. The removal of the calf I find to be no exciting cause, although I was taught so, and at one time believed it. It is the invariable practice in my district of Lincolnshire to allow the calf to remain

with the cow for a few days ; and I find as many cases of the disease, indeed more in proportion to the number of the cows kept, than in the north of Scotland, where they almost invariably remove the calf as soon as dropped.

I have frequently bled in the first stage of the disease, but with no good result, rather the contrary, as it tends to excite them too much, frequently producing convulsions and the conditions described by Mr. Fleming as resulting from anæmia. In the comatose stage I have found bleeding frequently remove or alleviate the brain symptoms, but only temporarily. So that I regard bleeding as of little consequence as a curative agent, the nervous system being too much implicated to be benefited by such a powerful depletant. Bleeding to be useful must be had recourse to earlier, even before calving, although it is seldom done ; but I have no doubt from the nature of the affection it would be a preventive if we could always determine what cows were to become affected.

In the second stage, where the animal is down, but not comatose, I proceed on the same principles of moderate stimulation—cathartics—with embrocations along the spine. If the temperature is low, I frequently use a hot smoothing-iron along the sides of the spine and across the loins with good effect, by preventing it getting lower or reviving it. Empty the rectum and bladder, draw the teats frequently, and endeavour to make the animal as comfortable as possible by placing and keeping her in a natural position.

At this stage of the disease I have frequently had good effects from the application of galvanism ; the two poles of a battery being placed one on each side of the spine in the lumbar region, and well pressed down by an assistant with a folded sack or some such non-conductor over them. In all stages of the disease, unless the first, when the cow is still standing, I find galvanism beneficial ; in it the excitement is too great, and it invariably does harm.

If an animal survives twenty-four hours after being first observed, and no marked comatose symptoms present, my experience is that recovery may be safely predicted, if no complication arise or previous disease of any organ, such as the lungs or liver, exist.

If it is an acute attack, and comatose symptoms suddenly show themselves, and the animal is in very high condition, I consign her to the butcher, for my experience is that the animals very seldom recover, whatever treatment you adopt. I consider it more in the interest of science to admit your inability to cope with an incurable condition than to exhibit your ignorance and incompetence by attempting it.

If the comatose symptoms are not rapidly developed and the animal lives over twenty-four hours or so, if inability to swallow be present, I find good results from giving medicines in a solid form in the shape of bolus, which is easily done and runs no risk of inducing pneumonia or bronchitis, as we frequently do, however careful, in administering medicines in the liquid state. Twenty to thirty croton seeds, *Ammon. Carb.* ʒij, ginger ʒiv, with any convenient excipient forms a suitable and appropriate remedy. As a tonic after the comatose stage has passed, I have good success from *Tinct. Nucis Vomicae*, combined with aromatic spirits of ammonia and *Tinct. Capsici*. Any complications, such as tympanitis, arising, which frequently militates against a cure, must be treated according to recognised practice by puncturing the rumen, &c., but the *Ammon. Carb.* ball has a very good effect in preventing such, and it would be useless to weary you with more detail.

And now, gentlemen, I expected and was prepared for a severe criticism of my opinions as to the pathology of this disease, but as the members have dwelt principally upon the therapeutics of the subject, I can only say that, considering the generous manner in which you have received my present attempt to deal with the pathology of the disease, if at some future time a gap were to occur in the contributions to your Society, and you were to honour me with the privilege, I would have no objection to come back and deal with the therapeutical part of the subject, which I could then do in a more complete form than would be admissible at present.

Mr. Gerrard then showed the members a brain that he had taken from a cow which had died of parturient apoplexy, which manifested a considerable degree of congestion on the anterior lobes principally, and at the close of the meeting the members had an opportunity of seeing him dissect it, when, notwithstanding that it had been some little time in spirit, it showed a distinct congestive appearance on the surface of the brain substance, as well as several small spots of extravasated blood.

The following gentlemen were then elected officers of the Society for the ensuing year, viz. :—*Mr. J. H. Welsby*, President; *Messrs. W. Whittle, H. Barnes, and J. W. T. Moore*, Vice-Presidents.

Mr. C. W. Elam was re-elected Treasurer, and *D. Hutcheon* Secretary.

Votes of thanks to the retiring President and *Mr. Gerrard* were carried by acclamation, terminating a very interesting and instructive meeting.

D. HUTCHEON, *Hon. Sec.*

NEW MEMBERS OF THE PROFESSION.

At a meeting of the Court of Examiners of the Royal College of Veterinary Surgeons, held January 6th, the following students from the Royal Veterinary College received their diploma, and were admitted members of the profession :

| | | |
|--------------------------------|-------|-----------------------|
| Mr. James Richard Carter, jun. | . . . | Litcham, Norfolk. |
| — George Crane Hunting | . . . | Halvergate, ditto. |
| — Frederic Thurston Hart | . . . | London. |
| — Samuel Oxton Langley | . . . | Birkenhead, Cheshire. |

The following students of the Royal Veterinary College passed their "Second Examination" at a meeting of the Court of Examiners on January 7th :

| | | |
|-------------------------------|--|--------------------------|
| Mr. Wm. John Payton Tibbatts. | | Mr. William Henry Beach. |
| — Frank Taylor. | | — Frederic Gowland Rugg. |
| — John Henry Riches. | | — Nicholson Almond. |
| — Wm. John Malvern. | | — Hy. Augustus Rumboll. |

The following students of the Royal Veterinary College passed their "First Examination" at the meetings of the Court of Examiners held January 8th and 9th :

| | | |
|---------------------------|--|----------------------------|
| Mr. David Evans. | | Mr. Ed. Arthur Hollingham. |
| — Henry Porter Gilbert. | | — Edward Langford. |
| — Alfred John Down. | | — Frank William Sharp. |
| — Charles Samuel Hunting. | | — Charles Albert Harriss. |
| — Edward Charles Wisken. | | — Arthur John Blake. |
| — Ernest Emelius Bennett. | | — Arthur Rogerson. |

Mr. Stephen Edward Holmans.

At a meeting of the Scottish section of the Court of Examiners of the Royal College of Veterinary Surgeons, held in Edinburgh on January 15th, the following students passed their "Final Examination," and received the diploma of the Royal College of Veterinary Surgeons.

EDINBURGH VETERINARY COLLEGE.

| | | |
|------------------------------|-------|--------------------|
| Mr. Edmund Day . . . | . . . | Michaelgate, York. |
| — George Humphries . . . | . . . | Manchester. |
| — Joseph Oswald Martin . . . | . . . | Manchester. |

EDINBURGH NEW VETERINARY COLLEGE.

| | | |
|--------------------------------|-------|-------------------------|
| Mr. Edward Curtis Howard . . . | . . . | Thatcham, Berks. |
| — George Alfred Browne . . . | . . . | Coleraine Co. L. Derry. |

GLASGOW VETERINARY COLLEGE.

| | | |
|-------------------------------|-------|--------------------------|
| Mr. John Robert Webster . . . | . . . | Garrybritt, Co. Wexford. |
| — John Barry . . . | . . . | Fulfane, Co. Kilkenny. |
| — William Clay . . . | . . . | Stockport, Manchester. |

LETTER FROM MR. J. ROALFE COX, M.R.C.V.S.

DEAR SIR,—Will you do me the favour to find a corner in the next issue of *The Veterinarian* for the following few remarks.

First, I am desirous of intimating to the profession that no diminution of interest in its welfare, has caused me to be absent of late from some of the meetings of Council, the explanation being my weakened health requiring prolonged rest. I had quite hoped to have attended the last Quarterly Meeting, where I should certainly have urged dissent from the decision which was arrived at in respect of the educational test for candidates for the Fellowship degree, as I have learnt with regret from the proof sheet of the proceedings which has come before me in exercise of my function as a member of the publishing committee, that which I believe to have been a serious digression from the original intention.

I believed the design in establishing a higher degree was to insure the stamp of genuine metal in such representatives of our body; and I think it cannot but be acknowledged a humiliating reflection how a discerning public may infer to the disadvantage of *members* of our profession, holding the lower qualification when for the higher (the Fellowship) the standard is comprised in the following requirements:—

Firstly.—Such knowledge of Latin as to write a Latin prescription, and translate a prescription from Latin (assuredly but a mean test of proficiency and barely a guarantee of ability to construe an independent line of Latin composition).

Secondly.—Such acquaintance with ordinary rules of arithmetic as necessary for carrying on the business of a veterinary surgeon, and for which probably the capacity for casting up the columns of his ledger and his bills might suffice.

Thirdly.—In writing a composition, or a letter, or a given subject, with correctness and facility of expression and grammatical accuracy, for which and the foregoing educational attainments the school board now-a-days can scarcely fail to qualify. Therefore, may we hope to have all *Fellows* in the future, and if so may I ask *cui bono*? and what gain to the profession or to the public, may be expected to result from the distinction of the second degree? I hope sincerely, in making these observations, which I conceive to be a duty, whilst an enforced absentee *pro tem* from my post, I may have urged nothing to assail the sensitiveness of any, and my desire to help and not to hinder the good of our profession has alone prompted me to trespass on your space and your readers' notice.

Yours' faithfully,

114, Mount-street,
London.

J. ROALFE COX.

THE FLEMING TESTIMONIAL FUND.

At the meeting of the Committee held at the Royal College of Veterinary Surgeons, on Friday evening, January 17th, 1879, Robert Ward, Esq., in the chair, it was resolved :—

Firstly.—That agreeable to the request of Mr. Fleming, the testimonial take the form of a handsome china hall clock, surmounted with a group of animals, at a cost of 50 to 70 guineas, and that Messrs. Batt, Duguid, and the Secretary be instructed to select and purchase.

Secondly.—That a neatly illuminated scroll be designed by the engraver to the college, to contain text and origin of the testimonial and the names of all subscribers.

Thirdly.—That the presentation of the above together with a purse take place at the Annual Dinner, in May next.

“He that ruleth his spirit is better than he that taketh a city.”

Prov. xvi. 32.

The duties of the hon. sec. being now near their close, it is sincerely to be hoped that the apparent misunderstanding, existing between the medical associations testimonial agents, and the committee, should cease, for there cannot be ground for complaint, indeed if there be ground, it must be taken by the hon. sec. and hon. treasurer, for gentlemen allowed their names to be placed on the committee and it was understood to assist the movement, attend the meetings, and render assistance or advice; notices were issued and summonses also, but the members of committee made themselves conspicuous by their absence; indeed on one occasion only one attended, viz. Mr. J. R. Cox, and at some inconvenience; thus, with only the two officials nothing was done—with such visible apathy one can judge the feelings of the hon. treasurer and secretary having the success or failure thrust upon them.

However, be all this as it may, the business has now advanced to near its completion; and our eyes should be directed to the one object in view, viz., a suitable expression of a rising profession to a brother, who has for no other object than true professional love and earnest desire to place our craft in high esteem, in its true and legitimate position, as an important science to our common wealth; laboured for years as an author, alone, and in true simplicity. Then let us set aside all party differences at once and for ever—go hand in hand, and on the first Monday in May, hand over a testimonial worthy of the man. That the scroll may hold the name of every good member of our craft is the earnest wish of

Your obedient servant,

ROBERT WARD, F.R.C.V.S.

Treasurer (pro forma).

London, Jan. 20, 1879.

P.S.—Before, and now Banks are alarming us, I had and have no wish to be the responsible holder of the Fund; but it would be far more becoming if those gentlemen who have collected

would kindly give in a statement of amounts in hand, either to me or the hon. sec. They are welcome to hold the same, and deposit it on the first Monday in May (the amount received by the sec. amounts now to £235 2s. 6d., which it is expected, will be augmented by subscriptions promised).

THE FITZWYGRAM PRIZES.

THE examination for the prizes given by Major General Sir E. Fitzwygram, will take place on or about Tuesday, the 29th April, 1879. The terms of the competition will be nearly the same as in previous years.

Competitors will be limited to gentlemen, who have taken their diploma since the Easter Examination of 1878.

Further particulars can be obtained on application to the Secretary of the Royal College Veterinary Surgeons, 10, Red Lion Square, W.C.

OBITUARY.

THE following deaths have been reported to the Registrar of the Royal College of Veterinary Surgeons during the past month by members of the profession resident in the localities where the deceased had been in practice:

Mr. Robert Collett, M.R.C.V.S., late Stafford. His diploma bears date May 4, 1821.

Mr. George Wildsmith, M.R.C.V.S., late Burton-on-Trent. His diploma bears date Jan. 6, 1835.

Mr. Thomas Duncalf, M.R.C.V.S., late Newport, Salop. His diploma bears date Nov. 22, 1831.

Mr. Michael P. Dolan, M.R.C.V.S., late Cashel, Tipperary. His diploma bears date April 15, 1869.

Mr. G. Doyle, M.R.C.V.S., late Kildare. His diploma bears date July 4, 1837.

Mr. James Spencer, M.R.C.V.S., late Stoke Ferry, Norfolk. His diploma bears date April, 6, 1837.

Mr. William Howlett, M.R.C.V.S., late Fakenham. His diploma bears date July 28, 1828.

Mr. Samuel Brown, M.R.C.V.S., late Melton Mowbray. His diploma bears date May 15, 1823.

Mr. George Stowe, M.R.C.V.S., late Warwick. His diploma bears date June 4, 1845.

Mr. Alfred Challinor, M.R.C.V.S., late Bolton, Lancashire. His diploma bears date Dec. 20, 1866.

Also, in the 53rd year of his age, Mr. Gilbert Heyes, F.R.C.V.S., late Hatton Garden, Liverpool. His diploma bears date May 1, 1856.



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Communications and Cases.

REMARKS ON THE *FILARIA MEDINENSIS*, OR
GUINEA-WORM; ON THE OCCURRENCE OF
THIS PARASITE ENDEMICALLY IN THE PRO-
VINCE OF BAHIA; ON ITS ENTRANCE INTO
THE HUMAN BODY BY DRINKING WATER.

By J. F. DA SILVA LIMA, M.D., Officiating Physician at the
Hospital da Caridade, Bahia. Translated from the
Portuguese by Dr. J. L. PATERSON, of Bahia, and com-
municated to Professor COBBOLD.

(Continued from p. 69.)

PART II.

IN 1850, while still a student of medicine, I was consulted
by Antonio Francisco d'Oliveira, a Portuguese merchant, of
some thirty years of age, resident in Joazeiro, a town at the
back of this province. He told me he had in his body a
guinea-worm, with which he had become infected in a
former journey from Bahia to that town, in company with
his brother and seven other persons, employed in his service,
of whom several suffered from a similar parasite, or had
expelled it, or had it extracted, either in whole or in part;
that, in him, it had travelled through various regions of the
upper half of the body, had worked its way up the left side
of the neck, crossed the brow, and descending by the temple

and the right side of the neck, had finally taken up its quarters in the corresponding side of the thorax; that this migration had occupied many days, and had been accompanied by a curious sensation of commingled tingling, itching, and pain, below the skin, which in some places, and especially in the temporal and frontal regions, showed a slight elevation, manifest to the sight and touch, and indicating the track of the *dracunculus*.

On examining the region pointed out by the patient as the seat of the worm, I found immediately below and outside the right nipple, and in a space more or less of the size of the palm of the hand, a number of irregular curvilinear elevations, crossing one another in various directions, like the loops of a cord or thick thread wound up below the skin; he had had for some time back no pain on pressure, nor any other disagreeable sensation, but, fearing the terrible accidents he had seen undergone by others suffering from the same affection, he urged me to extract the worm; this I refused, advising him to call in a surgeon that I named; he preferred, however, procrastinating, and left for Joazeiro.

The following year Oliveira returned to Bahia; the elevations, which he assured me were produced by the curling up of the worm, had disappeared, either because the worm, having died, had been gradually absorbed, or because it had migrated to some deeper locality. Never again, at all events, did it give any evidence of its existence up to the time of Oliveira's death, five or six years afterwards, from, I believe, some disease having its origin in marsh miasm, accompanied by anæmia, anasarca, &c.

In the course of the same year, 1850, and some months after my seeing for the first time this patient, his brother Manoel (whom two years ago I saw in Portugal, where he has resided for the last ten), came to Bahia and showed me his right thigh, affected with what looked like phlegmonous erysipelas, a state which had already lasted for several weeks, and had much annoyed him on his journey of eight or ten days on horseback. A small abscess during the journey had broken at the lower and inner part of the thigh, giving issue to part of the filaria, which then broke across. Soon after his arrival here the worm again made its appearance at the same opening, and in the course of a few days I extracted it without any difficulty, the fistula healing up and the phlegmonous inflammation disappearing, leaving only the mark of a small cicatrix still visible to this day.

These two facts, and others related by my patients, as witnessed by them in the persons of those who had accom-

panied them on this unfortunate journey, excited my curiosity, and the desire to know something alike of the place, where, and the mode of infection of the two brothers Oliveira and their companions, and I asked the first of them to give me in writing some information on these subjects.

Antonio Oliveira wrote me in 1852 to the effect that, in April of 1849, he set out from Bahia for Joazeiro with a number of mules laden with merchandise, being accompanied by his brother Manoel and seven other people, including slaves and drivers; that a year after six of the company, including himself and his brother, showed symptoms of the existence in them of the guinea-worm, which some of them had expelled, either whole or in part, while others still retained it entire; that, from information obtained from others long and well acquainted with the road, he learned that the guinea-worm was said to exist in a dam at Pojuca, near the Fiera de Santa Anna; and that in his opinion it was there he and his companions had caught the disease, for there they had rested for some time, and there they had drank the water from a small stream, occasioned by an overflow of the dam, from the heavy rains that had fallen shortly before.

This is all the information I possess, written by Antonio Oliveira, three years after his passing through Pojuca, where he and his companions became infected with the guinea-worm; nor did I ask for any more explanation, as at that time I had no intention of publishing the case; later on, however (in 1869), after the death of Antonio Oliveira and his brother Manoel's return to Portugal I resolved once more to open up the whole question, and, as far as possible, arrive at some definite conclusion, firstly, as to where, and secondly as to how, these travellers had become infected. For myself, from Joazeiro, where there still existed some of the patients and other eyewitnesses of the occurrence, I commissioned a brother of the two Oliveiras, Mr. Joaquin José Barboza, himself a man of much prudence and intelligence, to make a strict examination of the whole occurrence and the circumstances attending it, forming, as it did, a story even up to that time often talked of in the village. This commission my friend willingly undertook, and conducted with a strictness of inquiry that would have done honour to a judge. At the risk of being wearisome I shall here give, at least, a summary of this very lengthy inquiry, which, I am sure, will be pardoned me, seeing it undertakes verifying a very important fact in our medical history, viz. the endemic existence of the *dracunculus* in Brazil, and one,

moreover, bearing very closely on the question still under dispute as to how, or by what part the worm effects its entrance into the organism, and also, of course, bearing on the question of prophylaxis.

(*To be continued.*)

SYNOPSIS OF CONTINENTAL VETERINARY JOURNALS.

By JOHN HENRY STEEL, Demonstrator of Anatomy at the Royal Veterinary College.

(*Continued from p. 12.*)

Summary.—From *Recueil de Médecine Vétérinaire* of 15th of December, 1878:—Report of the Proceedings at the third sitting of the Congrès National Vétérinaire, also *M. Rossignol, of Melun*, on “The Elastic Ligature.” From the *Journal de Médecine Vétérinaire et de Zootechnie*, December, 1878:—*M. Chénier* on “Pneumatic Aspiration.” Also elections to professorships, and other veterinary honours. *Annales de Médecine Vétérinaire*, January, 1879:—*M. Trasbot’s* communication to the Paris Academy of Medicine on “Distemper.”

From the *Recueil de Médecine Vétérinaire*, 15th December, 1878:—“What share ought veterinarians to have in inspections of cattle fairs and markets, slaughter-houses and knackers’ yards; and also in (*Jurys de Concours*) election Conclaves and Assessment Commissions” was the complex question which the Congrès National Vétérinaire had to examine at its third sitting, 11th September, *M. Quivogne*, V. P., in the chair. The inspection of fairs and markets naturally belongs to veterinarians, since it aims at ascertaining whether animals brought to those places where they are to be sold are healthy or affected with diseases capable of transmission, and hence of bringing loss to the public. On that point there could be no disagreement; the Bill at present under consideration acknowledges the necessity of sanitary inspection of fairs and of markets, and confides the duty to veterinarians. According to *M. Viseur*, veterinary inspectors ought not to limit their duty to the pointing out the existence of a contagious disease in the animal and the forbidding it from entering the market; they ought to enlarge their mission by inquiring the name and address of

the proprietor, and by at once informing the Administration of the existence of the disease recognised, so that measures might be taken at the very centre of the contagion to prevent its spread by fresh removals of diseased animals. But thus skill would be needed on the part of the authorities, so that the same measures might everywhere be adopted against contagion so indicated. Since, if the inspection is efficacious only in one place and remains neglected in another, it is evident that the owners of sick animals would avoid the inspected markets, and would crowd towards those at which they would have nothing to fear from the action of the authorities; hence many of the good effects of sanitary inspection may be nullified. To be efficacious it must be rigorously enforced everywhere, and should everywhere tend to expose the sources whence contagion may emanate. This method is perfectly just, and when the law shall have been adopted and vigorously applied, it cannot fail to realise good results by the uniformity of the measures which it will impose, and which it will be in a position to enforce as a result of the organisation of the sanitary service. The inspection of slaughter-houses and knackers' yards ought to be in the hands of veterinarians, since here also there is needed appreciation of facts according to technical information which a course of instruction at the schools alone can thoroughly give. In all questions bearing on pathological anatomy there can be no doubt of this, for veterinarians only can well understand the nature of such morbid lesions as the examinations of carcasses tend to prove, to pronounce on the gravity of these lesions in their bearing on the value of the meat for food, and, in fine, to give to the authorities information to enable them, when necessary, to proceed to those sanitary measures which the nature of the lesions suggests. But does not the practical butcher possess all necessary qualifications for inspection of meat? We cannot deny that many persons would answer this question in the affirmative. It is the duty of veterinarians to counteract this idea by acquiring the practical knowledge of which it implies appreciation, and which skilful inspection requires. *M. Baillet*, of Bordeaux, considered the best method of nomination of inspectors of market meat would be by competitive examination involving practical and theoretical tests. Veterinarians could not find anything but advantage from this mode of election, for it is to them easy to acquire experience in such a small degree as would be required whilst the persons possessed of such experience without theoretical knowledge could not attain the necessary level,

however much they might try. In the lengthy and important memoir which M. Baillet read on this subject he has scarcely been able to conceal the very natural tendency to exaggerate the importance of the post of veterinary inspector of the meat market. He would have this officer permanent and immovable; when once he has been elected by competitive examination, he gives him a kind of discretionary power in all questions relating to the use of dead or live meat; authority should be vested in his hands; his judgment should be law. But such exaggeration would be prejudicial to our cause. It is doubtless advantageous that veterinarians be charged with inspection of meat. Breeders, consumers, officials would all benefit in this inspection being conducted by men combining the double qualification which theoretical knowledge and practical experience give. But the duty of the inspector should be simply that of an expert; on the authorities should fall the duty of deciding what consequences result from the decision by the inspector. *M. Viseur* sustained before the Congress the opinion which he has developed in many published papers on the importance of the facts revealed by autopsies in slaughter-houses and knackers' yards as indicating the hotbeds of contagion and leading to measures to eradicate it. This practical means is excellent, and has already produced good results, but it will attain satisfactory efficiency only by becoming general; otherwise it will only have the effect of sending diseased animals from inspected to non-inspected places of slaughter. This happens at Arras—a prefectoral decree acting in Pas-de-Calais, orders inspection of the stables whence come animals whose bodies after death exhibit the lesions of a contagious malady, such as pleuro-pneumonia; but this decree does not affect the department of the North, hence owners who have any fear of being “shown up” by the autopsies of their animals have not brought them to Arras, but have had them slaughtered in those towns where inspection simply referred to the quality and appearance of the meat. Uniformity of sanitary measures is then in this respect as necessary as in regard to living animals; that sanitary inspection may produce all its useful effects. Whatever may be the results to which it actually will give rise, M. Viseur is not the less deserving as suggesting the idea, which may be useful in the future, of making use of information derived from the carcasses to aid in the search for places whence sick animals come, and for thus exposing cases of outbreak of contagious disease which the proprietors of animals are anxious to conceal in order to avoid the

inconveniences of measures to which they would be subjected if the authorities were cognizant of the presence of dangerous disorders in their stables. With regard to the vote which ought to belong to veterinarians in election Conclaves and Commissions of Assessment, the almost unanimous sentiment of the Congress has been to protest against that which the profession considers as unjust, the subordination of veterinarians to other members in that they are only consulted. Why, since they have fitness, and in the majority of cases the superiority which their scientific and practical studies give them, should not veterinarians be placed on a level with the other members by having, like them, a deliberative voice? Against the present state of things many influential members of the Congress made energetic protests, not only personally, but in many cases in the name of the societies by which they were delegated. *M. Tanguy, of Landerneau*, only was not of this opinion, for he considered that with his consultation only a veterinarian remains more independent, since almost always he decides the question in point by the authority which attaches itself to his opinion; and if his opinion is not adopted, he remains totally devoid of the responsibility. This optimistic view of matters, however, was not approved by the Congress. The prevailing sentiment was that of ruffled *amour-propre* produced by the subordinate position in which veterinarians are kept, although in these Committees and Commissions to which they are admitted for consultation only, they may claim *at least* equality with the members who are placed above them by the fact of having a deliberative vote. What cause is there for this? We learn from a letter sent by the Minister of Agriculture to the Préfet de la Seine-Inférieure of 2nd of August, 1876 the cause of the position assigned to veterinarians in Committees is that, "since the institution of such Committees, without reflecting in any way on the honour of veterinarians, the Government made a rule never to admit them into the jury, as a means of protection of a position difficult on account of their duties and those of their profession." This letter answered the question "Whether it had not been forgotten that the name of M. Abadie, Veterinary surgeon to the Department, should figure on the report of the Jury charged to distribute the prizes of the Horse Show of 1876." "No," answered the Minister; "the position of Judge as requiring complete independence is opposed to that of veterinarians who would have to deal with a matter bearing on the interests of their clients." This argument certainly is forcible, but only so long as the

meeting is held in the neighbourhood where its veterinary members practice. Independently, then, of all personal interests, veterinarians should be placed on equal footing with all other members. But, as we were informed at the Congress, this is not so, which would seem to imply an intention, perhaps, solely resulting from an effete tradition of always keeping veterinarians out of the rank of deciding judges, calling upon them only when those in possession of power of decision wish to be enlightened on certain points of which they are ignorant. The Congress considered that such a state of affairs cannot be continued with justice, and voted as follows on the complex questions under its notice:—

“1st. That the inspection of slaughter-houses, public and private, and of knackers’ establishments, should be committed only to veterinary surgeons.

“2nd. That to veterinarians also only should be entrusted inspection of fairs and markets.

“3rd. That veterinarians should have a voice in decisions of election committees and commissions of assessment.”

The same number of the *Recueil* contains a valuable statement of the results which *M. Rosignol, of Melun*, has obtained from the use of the elastic ligature, he gives three cases of umbilical hernia reduced by the action of this means, and he seems to prefer this to methods generally in use.

M. Bouley has tried this method, but finds it needs insertion of a skewer through the hernial sac as a means of retention of the ligature. We give *M. Rosignol’s* summary *in extenso*.

““For nearly five years I have been accustomed to make use of this means. I owe the idea of it to an article published in the *France Médicale*, by Dr. Gillet, of Grandmont, who utilised it in removal of the breast of an anæmic woman, from whom any extensive loss of blood must have involved serious consequences. At first I only made use of it to remove the various tumours which are so frequent in domesticated animals. Later, in consequence of the communication of *M. Guérin, of Montereau*, to the *Recueil*, in which he announced that he had satisfactorily used the elastic band in castration of the horse, I also used it with success for the castration of the horse, ass, bull, ram, boar, and dog; also caoutchouc, employed in the form of a band, has succeeded with me as a hæmostatic, and in the form of a tube as suture thread; it is advantageous because it does not decompose by putrefaction, and because of its elasticity, which enables it to adapt itself to all variations in size, whether it acts on congested parts capable of direct reduction in bulk,

or on parts which are prone to congestion through previous inflammation. *Of the ligature as a means of exeresia (removal of tumours).* In horses and asses I have employed it for, perhaps, a hundred cases to remove the warts, sometimes of very large size, which appear generally upon the sheath, glans penis, skin of inferior part of abdominal walls, and that of the breast. Success has always resulted, and the patients have never seemed to me to suffer much. I also thus removed an immense epithelial tumour of diameter twenty centimètres, and weight eight kilogrammes, from the shoulder of a horse; it previously rendered the animal unfit for work, but fell off in fifteen days. An epithelial tumour from the outer surface of the hock, weighing 4 kilogrammes, fell off in twelve days; it recurred eighteen months after; and was removed again by ligature, but five days after the fall of the tumour, twenty days after the operation, the animal succumbed to tetanus. *Ruminants.*—Removed enormous warts from skin of abdomen in great number; also a large tumour from the elbow of a cow, looking like a sponge, and as large as a child's head, fell in twenty days, the length of time resulting from the thickness of skin of ruminants. *Carnivora.*—Ten successful operations for removal of carcinomatous tumour or pseudo-cancer of the mammary gland in bitches; also removal of an enormous erectile tumour from right anterior jaw of a dog of the Aguado kennel of Basses-Loges. *Treatment of fistulous ulcers.*—In the horse, to cure fistulous withers I place caoutchouc in the wound, after having considerably stretched it, I allow it to resume its original size; loss of matter after this occurs slowly, and the necrosed parts can be easily expelled, and caustic injections be applied with greater readiness. Reversion of the uterus of a bitch was treated by means of the elastic ligature; the case was of three days' standing, and reduction was impossible; in five days the organ sloughed off, and the animal recovered. Epithelial tumours of the lips of the vagina removed successfully in five cases of this affection of the cow, in no case was there recurrence. In umbilical hernia of foals, from experience of three cases, the ligature seems to me to be preferable to the suture, clamp, or even nitric cauterisation; it is quicker than the suture; the clamp is liable to fall off, in the male patient it is apt to interfere with the sheath and it does not produce such uniform pressure as does the elastic ligature; but the latter must be retained by means of a skewer, for otherwise the ceaseless effort of the panniculus will result in casting of the ligature. *Fall of the horns in sheep.*—A horn encircled at its base by a caoutchouc band no longer

obtains nourishment, the band soon forms for itself a groove round the base of the horn, and after seven or eight, sometimes twelve days, if you seize the horn it will remain in your hands. As a hæmostatic a strong caoutchouc tube or an elastic band of about twenty-five centimètres long, bearing at one end a metallic ring and at the other a crotchet (a garter in fact), is a powerful means of hæmostasis, useful whenever operations on the foot are necessary. This is always preferable to simple inelastic cord or tape. In cases of puncture of the carotid an elastic band is of great value; also in bleeding ruminants an elastic is preferable to an ordinary band. *Castration* (Equidæ).—Twelve horses and colts; covered operation with elastic band; one case of tetanus. Testicles fell in two or three days, or sometimes later. Four asses similarly operated upon without any ill result. (Bovidæ).—Six bulls operated upon by the method known as "*lashing*," the ligature embracing the whole scrotum and contents. Ligature 8 mm. in diameter. Complete mortification on the fifth day. I remove the mortified mass on the fifth day a little below the ligature. The animal seems to suffer little pain, and rumination is not suspended. This simple means seems preferable to use of the clamps; it is quickly applicable when the elastic band used is in the form of the above-mentioned hæmostatic garter. (Ovidæ).—Twenty-five castrations, by covered operation, of rams eighteen months old; two cases of gangrene and one of tetanus. Four hundred by the method of elastic "*lashing*," one doubtful case of gangrene, two of tetanus, at all times of the year, even during the excessive heat of July without accident. Two thousand castrations by *lashing* of sucking lambs, of two or three months, during excessively hot weather; three cases of tetanus. This method has been adopted by several practitioners. It has been found that tearing the testicles away in hot weather is very liable to cause gangrene. Two boars and three dogs operated on by covered operation with elastic ligature by M. Dordelle. In July a case of strangulated hernia successfully treated by this means. Three cases of champignon, resulting from castration with the clamps, successfully removed by elastic ligature; also a case of epiplocele in the horse five days after castration. *Sutures*.—In five or six cases prolapsus of the vagina or uterus of the cow was treated by insertion, as two sutures through the lips of the vulva, of the caoutchouc tube, 8 mm. in diameter. The ligature was found to remain as long as required without decomposition, to cure the prolapsus, and not inconvenience the animal. In ordinary sutures for

wounds I replace the waxed thread in general use with a thread of caoutchouc of the same size, slightly stretched. It is *imputrescible*, gives constant pressure to the lips of the wound, yields to pressure from congestive swelling; in a word, adapts itself to all variations in the form of the part. I have tried many threads, and prefer the tubes of English sheet material, of the diameter of 7 to 8 mm. (about $\frac{1}{8}$ in.); it is firm, very elastic, and can be easily tied, either in a fixed or slip knot.

Journal de Médecine Vétérinaire et de Zootechnie.—“Notes on puncture with aspiration in veterinary practice,” by M. Chénier.—*Summary*:—Dr. Dieulafoy has placed in our hands, as “capillary puncture with aspiration,” a simple but valuable means of diagnosis which is accurate and absolutely harmless. The puncture produced is so small as to be painless, and not to allow ingress of the air and the serious consequences which supervene thereupon. Opening a fluctuating tumour by the hot iron or bistoury is open to the objection that it produces inflammation, may injure important vessels, and will admit air freely into the cavity, which therefore takes a longer time to heal. The ordinary trochar is preferable to these latter methods, but entails often hæmorrhage, inflammation, and subsequent infiltrations of the tissues. Pneumatic aspiration leads to none of these ill-effects; and also, since the fluid contents of the tumours are *drawn* away, pressure and other manipulations necessary in other methods of operation are here avoided.

I. *As a means of diagnosis* this method is valuable in cases where effusion is suspected, of presumed purulent collection, or doubtful hernia. It not only shows the presence of liquid, but also the nature of the contained fluid, and thus by rendering diagnosis sure leads to suitable treatment. But it is perhaps most useful in localised and deeply seated collections. The ordinary trochar may, in such cases, give false indications, since it may pass beyond the collection, and no rush of liquid follow withdrawal from the canula. Dr. Dieulafoy recommends the following method of performance of the operation:—The boring needle is passed through the integument, it is then fitted to the body of the pump, which has been previously rendered a vacuum, either directly or by means of a caoutchouc-tube joint. The corresponding spout of the aspirator being then opened the needle is driven little by little through the tissues until its ready passage shows that it has entered the cavity which we seek to penetrate. As soon as the orifice of the needle meets the liquid the latter rapidly enters the instrument, where its

presence and its distinctive character may be easily recognized, the walls of the pump being made of glass. The results of this procedure are not always satisfactory. Thus the needle may be obstructed at the moment when it pierces the cavity; this seldom occurs, fortunately so, for it may lead to very considerable error.

II. *As a surgical means.*—The principal advantages which the method has over the ordinary trochar are—1st. The wounds produced are absolutely harmless. Thus, in human surgery, it has been used for puncture of most delicate organs and membranes, as the bladder, pericardium, and meninges of the brain. In theory, therefore, the puncture with the capillary trochar ought to be preferred to puncture by the ordinary trochar whenever it is necessary to remove any deposits by operation from organs or tissues very liable to inflammation; whenever the part operated upon has large and numerous vessels; and whenever the liquid to be removed would act as an irritant on neighbouring tissues. 2nd. As already noted, aspiration withdraws the tumour contents, preventing the necessity of forcible manipulation of the surface. 3rd. Pneumatic aspiration does not allow admission of air, an important point in thoracentesis, for example.

III. *Indications.*—By no means definite, for so general is its usefulness that we must always have on hand some case where it may be applied with advantage. Thus, it is useful whenever, for example, it is necessary to produce the evacuation of a collection of fluid from a large or small serous cavity; whenever it is necessary to act surgically on important viscera, the spleen, for example; whenever it is necessary to puncture a deep-seated abscess in the parotidian region or other situations where are large vessels and highly organised tissues. In strangulated hernia too, it will render great service by allowing the easy, rapid, and dangerless evacuation of the fluid portions of the herniated loop of intestine, which constitute the greatest obstacle to return of the bowel by the taxis. Dieulafoy's apparatus may, with advantage, be substituted for the trochar and canula for the injection of medicinal agents into a closed cavity, since it drives no air in with the injection. The following is the method of operating in such a case:—The sac being emptied by aspiration we close the tap corresponding to the needle and open the other one to remove the morbid fluid which has passed into the cavity of the pump. Then we, by raising the piston, introduce the injection fluid into the body of the pump. Then close the outer tap and open the one nearest the needle

and expel the liquid by pressing on the piston, being careful to keep the apparatus above the pouch, in order to retain in the top of the pump some bubbles of air which always gain entry.

IV. *Contra-indications*.—Pneumatic aspiration must not supplant the hot iron in opening superficial purulent collections. Though Dr. Dieulafoy recommends in cases of dropsy of serous cavities frequent removal of the accumulated serum before any attempt is made to act upon the system by medicaments it would be better for veterinarians to try pneumatic aspiration and therapeutic measures simultaneously.

V. *Practical results*.—We have tried this means frequently for diagnosis, and in other cases as a therapeutic, and again for diagnostic and therapeutic action combined. It has been absolutely useless in cases of blood and spongy tumours. The result has been very satisfactory in the case of cysts on the back and of serous tumours of the limbs, the evacuation of the liquid being followed by application of a blister. Similar treatment has been very satisfactory in the case of hygroma (anasarca); in cases of windgalls, however, this treatment does not prevent recurrence. In a single case of dropsy of the sheath of a tendon the pneumatic aspiration with injection of iodine had a very favorable result, as also in a case of acute swelling of both hocks.

VI. *Conclusion*.—"In conclusion, I believe pneumatic aspiration destined to render great service to veterinary medicine; as a method of treatment or of diagnosis, in the latter respect it is a means of investigation intrinsically valuable and the more so as being absolutely harmless. As a surgical method it must not replace ordinary means in all cases, but is worthy of introduction into general practice."

We note the following elections to professorships at the French schools:—To the Chair of the Pathology of Contagious Diseases, Sanitary Police, and Medical and Commercial Legislation—M. GALTIER, for Lyons, and M. PEUCH, for Toulouse. Also for the three Chairs of Natural History and Materia Medica—M. RAILLET, for Alfort; M. BARRIER, for Toulouse; M. FAVRE, for Lyons.

We also observe with satisfaction that M. SANSON has been elected President of the Society of Anthropology for 1879, and M. ST. CYR, Vice-president of the Society of Agriculture, Natural History, and Useful Arts of Lyons, for 1879 and 1880.

From the *Annales de Médecine Vétérinaire* we extract:—At the sitting of the ACADEMY OF MEDICINE OF PARIS, of 10th December, 1878, M. Trasbot, candidate for election to

the Section of Veterinary Medicine, communicated to the Academy the *résumé* of a series of experiments which enables him to state that distemper of dogs is contagious and can be prevented or moderated by inoculation with the virus of the disease. The following are the results of the first series of experiments by the author:—1st. Distemper of dogs is virulent, and can be communicated by inoculation to animals of the same species who have never before been affected by it. 2nd. It may be similarly communicated by contact. 3rd. Whether transmitted by contact or by inoculation it is often fatal to young animals, seldom to older dogs. 4th. It cannot be transmitted by inoculation to old animals who suffered from the disease when they were young. The following are the results of a second series:—1st. Vaccine can produce its effects after introduction into the dog's system, provided the patient has never suffered from distemper. 2nd. But will never do so if the subject has previously suffered from that disease. 3rd. It does not positively prevent the after development of distemper.—4. Though vaccine does not absolutely prevent distemper, and by no means proves that the latter is not the analogue of variolæ of other species of animals, for vaccine no more preserves the sheep from "sheep-pox."

THE PRINCIPLES OF BOTANY.

By Professor JAMES BUCKMAN, F.G.S., F.L.S., &c. &c.

(Continued from p. 80.)

THE NATURAL ORDER LORANTHACEÆ.

LORANTHS, now to be described, are diagnosed by Prof. Lindley as follows:

DIAGNOSIS. — *Asaral exogens, with a 1-celled ovary, and definite ovules with a naked nucleus.*

The order, with few, if any, exceptions, is made up of parasitic plants, of which our native Mistletoe, *Viscum album*, is a most interesting and characteristic example.

The position of the order is a difficult problem, which we shall best answer by quoting the following from the 'Vegetable Kingdom.'

"Very different opinions are entertained by botanists concerning the true affinity of the Loranths. In some respects they are near caprifoils, from which they are readily known, not

only by their parasitical habit, but also by their stamens being opposite valvate lobes of a tubular calyx. Don has expressed an opinion that a connection is established between this order and Araliads, by means of *Aucuba* (*Jameson's Journal*, Jan., 1830, p. 163). Bronn ('Flinders,' p. 543) suggests a relation to proteads. Endlicher decides in favour of the relation to caprifoliads, witch hazels, and cornels. Adrien de Jussieu takes a similar view (Cour's 'Elément,' p. 567). D'Wight suggests a relation to alanqiads. Adolphe Brongniart combines them along with chloranthids, sandalworts, and olecads, into a class which he calls Santalierées. These discordant opinions are caused by the different interpretations put by botanists upon the nature of the floral envelopes.

It is customary to call the floral envelopes of the genera of Loranths by the name of sepals in *Viscum*, and of petals in *Loranthus*, because in the latter genus we find extended to them a cup-like expansion, which is regarded as a calyx. It, however, seems impossible to doubt that the parts of the perianth are really of the same nature in both instances, as is proved, moreover, by the stamens which are applied to their face in both cases. Schleiden, indeed, calls the ♂ flower of *Viscum* naked, and supposes it to consist of nothing but anthers; but M. Decaisne has more correctly shown the ♂ flowers of that genus to consist of four anthers grown to the inner face of four calycine sepals. The rim exterior to the calyx, which has given rise to the idea that the coloured part of a Loranth is corolla, is present in *Viscum* also in the form of a slight annular swelling; and is in all probability analogous to the raised line terminating the cup from the rim which the sepals spring, *Chryseis Eschscholtzia*. In fact, we must in theory regard the flower of a Loranth to consist of a fleshy cup-like expansion of the end of a branch, from the upper edge of which expansion the sepals rise. This point being settled, we then have no difficulty in admitting the near alliance of loranthids and sandalworts, a fact not lost sight of by D'Bronn in his *Prodromus*. He also, in speaking of his *Myrodendreae*, or feathered loranthids, again adverts to the resemblance between their three ovules suspended from the apex of a central placenta, and the same part in sandalworts (*Linn. Trans.*, xix, 232). Decaisne, too, recognises their apetalous condition, and refers them to the neighbourhood of sandalworts. They may also be looked upon as having considerable analogy with proteads, which must be considered to occupy a place in the perigynous sub-class, parallel with that of loranthids in the epigynous. The occasional separation of the ♂ and ♀ in different flowers points strongly to a relation to some declinous order, which relation seems to be found in helwingiads.

In some respects this singular order offers very curious deviations from the ordinary structure of similar plants. The wood of *Viscum* is described by Decaisne as consisting, when young, of eight woody bundles surrounding a green pith; in these bundles are no spiral vessels, but, instead, and nearly in the place where they are usually found, some ringed tubes; these, together with elongated and dotted or reticulated cells and fibres, analogous to those of the liber, make up all the longitudinal tissue of the plant. On the outside of these bundles of woody matter, and opposite to them, are found others similar in number, but smaller, and composed exclusively of fibres of the liber ('Mémoire sur le Développement du Gui'). Brown states that in *Myrodendron* the whole woody tissue consists of ladder-shaped vessels (*V. scalariformia*), a structure very different from that of other genera of loranths.*

The loranths are said to include 23 genera, containing as many as 412 species.

The order would appear to be pretty generally dispersed through Asia and America, but are feebly represented both in Europe and Africa. Our own Flora contains a single species.

Our native representative of the order has most recently been defined by Dr. Syme, as follows:

VISCUM—*Linn.*

"Flowers unisexual, dioecious. Male flowers: calyx obsolete; corolla of 4 fleshy petals united at the base; anthers 4, adnate to the petals, opening by numerous pores; ovary rudimentary to none. Female flowers: calyx-tube adnate to the ovary, calyx-limb obsolete: petals 4, inserted on the summit of the calyx; stamens absent; ovary inferior; stigma sessile. Berry pulpy, 1-seeded.

"Parasitical shrubs growing on the branches of trees.

"The name of this genus of plants comes from the Greek word βίσκος (*biskos*), tenacious, from the adhesive properties of the berries of the species.

VISCUM ALBUM—*Linn.*

"Stem repeatedly dichotomous, terete. Leaves opposite oblanceolate, coreaceous-fleshy, without evident nerves. Flowers in clusters of about three together in the upper forks of the branches and axils of the leaves.

"Parasitic on the branches of various trees, especially on the apple, poplar, hawthorn, maple, and lime.

* 'Vegetable Kingdom,' pp. 789—90.

“Not uncommon in the south and west of England, rare in the north; not native in Scotland.”*

These extracts are sufficient to enable us to make out the position and specific details of the mistletoe, but the nature of its parasitism.—Its range of growth—The different trees it has been found upon, &c., will furnish sufficient matter for this article—while its qualities, uses, and folk lore, may well be dwelt upon in a future paper.

Some few years since, in concert with our friend E. Lees, Esq., of Worcester, we tried to propagate mistletoe on various kinds of trees, which we did by making slits in the bark of comparatively young twigs and inserting the seeds. In other cases the seeds were simply pressed on to the under side of the branch to which it would adhere by its plastic juice.

It was found that scarcely any hard-wooded tree but may be made to become a foster-parent to the mystic plant, but those upon which it was generally found, as the apple, black poplar, and lime, were the easiest trees on which to carry on its propagation, and hence upon these there is no difficulty in making the seeds germinate, whereas upon some others, it was no easy task to succeed.

The mistletoe has had numerous observers and experimenters. Lees, Griffiths, Harley, Bull, and others of our own countrymen; and Unger, Decaisne, Schacht, and Pitra, on the Continent. We copy the following on the parasitism of the plant from a paper by Dr. J. Harley, read before the Linnæan Society:

“The mistletoe attaches itself to the nourishing plants by roots, some of which are horizontal and confined to the bark, the others are contained within the wood. Henslow, Griffith, Unger, Schacht, and Pitra, all agree so far as their individual statements extend, in the following particulars:—The young plant first sends into the bark of the nourishing plant a single root, sucker, or *seuker*, which, pressing inwards, comes into perpendicular relation to the wood of the nourishing plant, in the cambial layer of which the point rests, and there ceases to grow. In its passage towards the wood it gives off several horizontal or side-roots, which runs along the branch in the back or upon the surface of the wood. These side roots give origin to perpendicular suckers (*seuker*), which come into contact like the original root, with the surface of the wood. The wood and bark of the mother plant, in their periodical increase, form layers around the suckers, which grow in exactly the same manner in the cambial stratum,” and thus the hardened suckers come to be imbedded in the body of the wood.

* Sowerby's 'English Botany,' vol. iv, p. 189.

I will now proceed to detail the results of my own observation, introducing, as occasion requires, such particular statements of these several authors as are not mentioned here. First, as to the general character and structure, and the arrangement and direction of that part of the mistletoe which lies within the nourishing plant.

Its ramifications are composed of a delicate, yellowish-green, soft cellular tissue, which, shortly after making sections of a branch charged with mistletoe, shrinks below the level of the wood to the same extent as its younger layers of bark. When moistened, however, the young roots immediately swell up and project considerably above the surface of the wood.

The young roots, and the equally soft cellular terminations of the older ones, are chiefly composed of delicate tubular cells, the $\frac{1}{200}$ th of an inch long and the $\frac{1}{1000}$ th of an inch wide, joined end to end, and arranged parallel to each other, and to the long axis of the root.

This parenchyma is pervaded by a few (the number depending upon the age and size of the root) straggling plates of young prosenchyma, each composed of one or two layers of small, thick-walled elongated cells, destitute of markings.

Arranged in the same radiate manner as the plates of prosenchyma, and in the larger roots associated with it, but in the younger occurring alone, are narrow bundles of vessels formed of one, two, or three rows of very delicate reticulated ducts composed of elongated cells $\frac{1}{200}$ th of an inch long, and $\frac{1}{500}$ th of an inch wide, joined to each other by their oblique ends. The woody fibres and ducts take the same direction as the root.

The extremities of the young roots, the base of the mistletoe, gradually diminishes in size from the surface of the supporting branch inwards, that being the thickest part of the entire plant, which corresponds in position to the outer surface of the last formed layer of the wood. From this situation the base of the parasite in its simplest condition, tapers as it passes towards the centre of the branch—gradually in the case of a young plant, so as to form a long, tapering root, suddenly in an old plant—forming a short, conical, woody plug, which, however, invariably ends in a slender cellular process. But more commonly the base of the mistletoe terminates in three or four, and sometimes five or six such tapering roots, when the base of the parasite does not exceed at its thickest parts $\frac{4}{10}$ ths of an inch in diameter itself, and all are altogether destitute of prosenchyma, but here the ducts are very numerous. The parenchymatous cells which form the surface of the root, and connect it with the tissues of the nourishing plant, are narrower than those lying more internally, and measure only the $\frac{1}{1500}$ th of an inch wide. A similar

contraction is observed to occur in the reticulated ducts as they approach the surface of the root, and before they come into connection with the surrounding wood they become reduced to half their original width.*

That our plant is truly parasitic is now shown beyond a

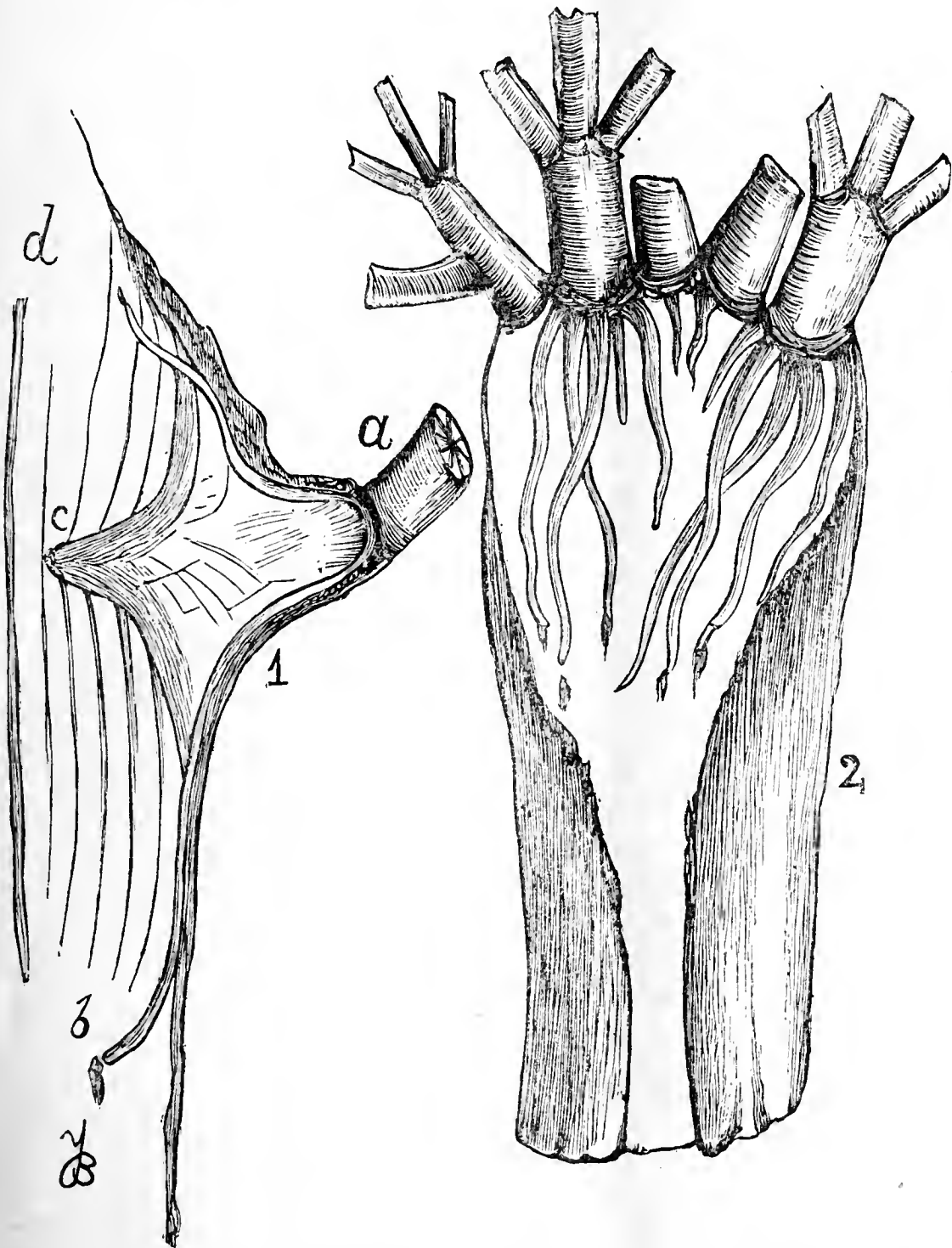


FIG. 1.—Mistletoe on *Robinia pseudoacacia*. *a*. The parasite cut off below to show the wedge-like insertion of its wood into the foster-parent (*c*). *b*. The radicle of mistletoe inserted into the wood. *d*. The central pith. These radicles are light green.

FIG. 2.—Branch of *Robinia* with a portion of the bark removed showing the mode of growth of the radicles.

doubt; that it is also exogenous is seen from sections of both young and old mistletoe stems; but though this is so, we view

* 'Transactions of the Linnæan Society,' vol. xxiv, pp. 175-6.

the parasite as commencing its life on the foster-parent by penetrating the bark of the latter with its own true radicles ; these radicles, too, can spread, and bud out at the surface of the foster-parent for some distances from the insertion of the parasite, thus throwing up suckers after the manner of elms, robinia, and other rhizomatous, or running rooting trees.

That the nature and growth of the foster-parent would exert great influence on the parasite would naturally be expected, and hence perhaps the partiality of the latter for certain trees over others, for though it is found by experiment that mistletoe can be made to grow on a large variety of trees, it is nevertheless true that, in the field, lots of contiguous trees will be altogether missed, while others will be found, though at great distances apart, to be laden with the mystic boughs. But, curiously enough, it seems that one sort of tree is chosen in one district, and another in others. Thus, in Gloucestershire we have seen the black poplar laden with mistletoe for long stretches, where the apple orchards were hardly attacked. At Hampton Court the lime is its favourite resort. In Hereford, Worcester, and Gloucester the usual nidus is the apple-tree, and though in the two latter counties the pear-tree abounds to the extent of whole orchards devoted to it, we have never seen the mistletoe in a pear, though our friend Mr. Lees has recorded it as rarely met with. Here one of the most interesting points of inquiry is that of the infrequency of mistletoe on the oak.

The oak is found everywhere—intermixed with orchards—whole forests of it, hedge-rows and scattered trees in the midst of orchards, and yet the mistletoe in the oak is a rarity. We have been repeatedly asked, “Is mistletoe found on any trees beside the oak?” as though oak was its most natural foster-parent, and yet though the oak abounds in most mistletoe districts, the number of this tree on which the parasite has been found can be counted on the fingers. The following, as given by Dr. Bull, of Hereford, is a—

LIST OF EXISTING MISTLETOE OAKS.

Eastnor Park, Herefordshire ; Tedstone Delamere, Herefordshire ; the Forest of Deerfold, Herefordshire ; Frampton-on-Severn, Gloucestershire ; Sudbury Park, Chepstow, Monmouthshire ; Burningfold Farm, Dunsford, Surrey ; Hackwood Park, Basingstoke, Hants ; and on an oak near Plymouth.

Small as is this list, yet there is reason to think that it would be difficult to add to it. Mr. Lees, in writing upon this subject, has the following remarks :

“The mistletoe in the oak is undoubtedly a great rarity, and

I consider this to arise partly from the Romans having destroyed all the Druidical mistletoe, for it is most remarkable that though so many old oaks are recorded as existing in this country, perhaps upwards of 1000 years old, yet not one has mistletoe upon them. Even the Rev. W. Davies, in his *Flora of Anglesea*, once the headquarters of Druidism, is unable to mention a single locality where the mistletoe now grows there. Some years ago I had a long ramble in Surrey after the mistletoe of the oak. Being in London, an enthusiastic friend came to me one day and said, exultingly, that he had just heard that the mistletoe had been seen on an oak at Bookham Common, and that in the woods of Surrey it was not uncommon. The next morning we started over bush, brake, and scaur; but deluged with rain after many efforts, drew only a blank day; and we learned afterwards, to our great mortification, that my friend's informant had *meant* ivy when he *said* mistletoe!*

"The mistletoe in the oak," writes an energetic searcher for it in Monmouthshire, as quoted by Dr. Bull, "is like a ghost; it vanishes into thin air when you try to grasp it; everybody has seen it long ago, but the tree is always cut down, or somehow or other, the result is *nil*." Most woodwards will tell you, and in good faith too, that they have seen it, and, indeed, will generally mention the exact tree and place where it grows, but the results of their further examination has always been the same—for some cause or other the instance fails, and the mistletoe can never be shown on the oak. The tree has been felled, or blown down, or it may be the isolated branch of wild ivy or honeysuckle, or a cluster of small oak branches has deceived them.*

We may take it for granted then that the mistletoe on the oak is a matter of comparatively rare occurrence at the present time, and it is doubtful whether in the Celtic period it was more prevalent. This very scarcity has been thought by some to be the reason why mistletoe-on-the-oak was so much venerated by the Druids, but we must remember that so little was known about trees at this early period, that by hook or by crook, or may be the intervention of a miracle, enough would doubtless be found for the market.

We come now to note upon the different trees on which the parasite has been found.

The following lists are quoted from Mr. Lees' '*Botanical Looker Out*,' and refer principally to the County of Worcester: we have put his initials to these. The additions to the text are by us, and for the most part contain Gloucestershire additions.

* '*Botanical Looker Out*,' p. 51.

† '*Journal of Botany*,' vol. ii, p. 373.

The second list is by Dr. Bull, and refer principally to Herefordshire localities. It is a fuller list than the first, but fails for the most part in any mention of localities.

LIST OF TREES ON WHICH THE MISTLETOE GROWS, MOSTLY FROM WORCESTERSHIRE, BY EDWIN LEES, ESQ., F.L.S., F.G.S., &c.

ON THE APPLE.—“Extremely abundant; and why it is so, I think, arises from the disposition in that tree to form knots, a disease produced from an excess of sap, or an inertness in it which the mistletoe offers a relief to, somewhat analogous to cupping—the redundant juices being carried off as nutriment to the parasite.”

CRAB.—“Common.” (E. L.)

PEAR.—“Rare.” (E. L.)

BLACK ITALIAN POPLAR.—“Very freely.” (E. L.)

OTHER POPLARS.—“Very rarely.” (E. L.)

LIME.—“Rather common, and often plentiful, infesting the trees to the summit.” (E. L.) It attaches itself to some of the finest trees in several countries.

HAWTHORN.—“Frequent and in extending lines” (E. L.). We have but seldom met with it.

MAPLE.—“Not unfrequent” (E. L.). We have seen this once or twice in Gloucestershire.

SYCAMORE.—“At Lansdown, Cheltenham, pointed out to me by my friend, Professor Buckman” (E. L.).

It is now some twenty-five years since we took our friend to see two trees of sycamore growing together opposite Lansdown Crescent, in both of which were bunches of mistletoe, and these are the only instances we have met with. The trees are fine old specimens.

MOUNTAIN ASH.—“Very uncommon in the vicinity of Ledbury and about the Malvern Hills” (E. L.).

WHITE BEAM (*Pyrus aria*).—“Unfrequent, but on the rocks near the western portal of Chepstow Castle is a fine tree, with much mistletoe upon it” (E. L.). Though this is a common tree in Gloucestershire, we have never seen any mistletoe upon it. This may be from the fact that it mostly grows on the Oolites to which apple orchards scarcely extend.

HAZEL.—“Of very rare occurrence, and esteemed by the Druids next to that on the oak” (E. L.).

ELM.—“In one locality, near Bushley Park Farm, in the vicinity of Tewkesbury.”

ROBINIA PSEUD-ACACIA.—“Local, though in shrubberies in

* We have put Mr. Lees' initials when quoting his remarks. Other remarks relate chiefly to Gloucestershire.

Worcestershire. I have several times seen it there, as at Thorn-grove and Stanford" (E. L.). We have met with it at Burnham, in Bucks.

WILLOW.—"Occasionally, in a field north of Great Malvern" (E. L.). We have seen one instance in the Stroud Valley, Gloucestershire.

ASH.—"Sometimes very profusely" (E. L.). We have never seen it in this tree.

MEDLAR.—"Met with one only at Forthampton, Gloucestershire" (E. L.).

BIRCH.—We have seen one example of this in a wood near St. Briavels, in the Forest of Dean, Gloucestershire. As nearly as we can recollect, it was a tree of about thirty summers.

HICKORY.—A specimen on hickory was sent to us from the estate of the late P. W. S. Miles, Esq., Kings Weston Park.

LIST OF TREES ON WHICH THE MISTLETOE GROWS IN HEREFORDSHIRE. By H. BULL, Esq., M.D.*

Apple tree (*Pyrus malus domestica*) throughout the county.

Apple tree or white poplar (*Populus alba*); not common.

Grey poplar (*P. canescens*); rare.

Aspen (*P. tremula*); occasionally.

Black poplar (*P. nigra*); rare.

Black Italian poplar (*P. monifera*); very freely.

Canadian poplar (*P. Canadensis*); very common.

Ontario poplar (*P. candicans*); common.

Hawthorn (*Cratægus Oxyacantha*); not uncommon.

Crab (*Pyrus malus*); general throughout the county.

Lime tree (*Tilia Europæa*).

Maple (*Acer campestre*).

White flowering acacia (*Robinia pseud-acacia*).

Mountain ash (*Pyrus acuparia*).

Ash (*Fraxinus excelsior*).

Common white willow (*Salix alba*).

Hazel (*Coryllus avellana*).

Pear tree (*Pyrus communis*).

Oak (*Quercus robur*).

Alder (*Alnus glutinosa*).

Round-leaved sallow (*Salix caprea*).

Sycamore (*Acer pseudo-platanus*).

Common dog rose (*Rosa canina*).

Medlar (*Mespilus Germanica*).

Wych elm (*Ulmus montana*).

* 'Journal of Botany,' vol. ii, pp. 365-6.

The mistletoe also grows spontaneously on the following cultivated trees in this county :

Yellow horse-chestnut (*Æsculus Hippocastanum*).

Western plane (*Platanus occidentalis*).

Eastern plane (*P. orientalis*).

American crab (*Pyrus malus Americana*).

Red swamp maple (*Acer rubrum*).

Upright wych elm (*Ulnus montana erecta*).

It will be seen that the names of the latter half of this list have no comments made upon them ; they are mostly those of comparatively recently introduced trees, and we are led to conclude that the parasites upon some of them must be exceedingly rare.

VETERINARY OBSTETRICS.

Letter from J. HOOLE, M.R.C.V.S., Sleaford.

SINCE advocating the use of the "chain saw" and "chain sector" in the operation of embryotomy, Messrs. Arnold and Sons have made the above-named instruments for me. I have been waiting for an opportunity to give them a practical trial ; but a case requiring their use not having occurred, I have tried them on foetal calves *ex utero*, and am fully convinced, from the ease and rapidity that the neck was cut through, and the fore and hind limbs detached, that some of the greatest difficulties met with in obstetric practice will now be easily overcome.

I am, &c.

To the Editors of the 'Veterinarian.'

THE PRESENT STATUS OF THE PROFESSION.

By a COUNTRY PRACTITIONER.

HAVING considered this subject I will briefly state some facts. A few weeks ago, on reading the *Stamford Mercury*, I was astonished to find in it a paragraph to the following effect :—At Boston County Court, Mr. Wyer, M.R.C.V.S., Old Leake, Lincolnshire, sued a farmer for £9 odd for professional services rendered. The farmer disputed it, paying £6 odd into court, and obtained the services of Mr. George Bland, M.R.C.V.S., of

Boston, to dispute it. Mr. Wyer, to substantiate his claim, obtained the opinion of Mr. Leach, a practitioner of Boston, and Mr. Wyer won his case.

Some time previously I heard of another member of the profession in Lincolnshire who had a bill of nearly three years' standing disputed by a farmer, who employed him up to the time the dispute arose. The account was handed to the following veterinary surgeons:—H. Howse, Lincoln; J. Brown, Lincoln; and T. E. Smith, of Market Rasen. Mr. Howse declined to appear, but sent a letter, which was handed to the judge, which, I believe, his Honour refused to accept as evidence. The other two members appeared. The account, as a whole, was considered by them as exorbitant; the items taxed were 1s. for a visit and 7s. 6d. for blistering two coronets and two fore legs.

I mention these facts to give other members a faint idea of the manner members of the profession support each other in some counties.

Pathological Contributions.

THE CONTAGIOUS DISEASES (ANIMALS) ACT, 1869.

PLEURO-PNEUMONIA.

IN the Netherlands there appears to be a great decrease in the number of cases of pleuro-pneumonia. During the month of January of this year only sixteen cases of this disease occurred, of which fifteen were in South Holland, and the other case in North Holland.

THE prevalence of pleuro-pneumonia in the United States has been investigated by Professor McEachran, of the Montreal Veterinary College, who reports that the disease exists in New York, New Jersey, Virginia, Maryland, the District of Columbia, and particularly near to Washington and Alexandria. It prevails also among dairy cows to a serious extent in and around the City of Brooklyn.

RETURN of the Number of Places in Great Britain upon which contagious or infectious disease (except sheep-scab) has been reported to have existed during the week ended February 8th, 1879, with particulars related thereto.

PLEURO-PNEUMONIA.

PLEURO-PNEUMONIA.

| | Farms or other Places. | | | Cattle attacked. | | Diseased Cattle. | | | | Cases which existed in previous Weeks not reported until this Week. | |
|---|--|---|---|--|---------------------------|------------------|-------|------------|------------|---|------------------|
| | Number reported upon this Week which have been previously reported upon. | Number upon which Fresh Outbreaks have been reported to have taken place during the Week. | Total Number reported upon during the Week. | Remaining diseased from the previous Week. | Attacked during the Week. | Killed. | Died. | Recovered. | Remaining. | Fresh Outbreaks. | Cattle attacked. |
| ENGLAND. COUNTY.* | | | | | | | | | | | |
| Chester | 1 | 2 | 3 | .. | 2 | .. | .. | .. | 2 | .. | .. |
| Cumberland | 6 | .. | 6 | .. | 1 | 1 | .. | .. | .. | .. | .. |
| Derby | 2 | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. |
| Essex | 11 | 4 | 15 | .. | 6 | 4 | 1 | .. | 1 | .. | .. |
| Hertford | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. |
| Huntingdon | 3 | .. | 3 | .. | .. | .. | .. | .. | .. | .. | .. |
| Kent (ex. Metropolis) | 3 | 1 | 4 | .. | 3 | 3 | .. | .. | .. | 1 | 2 |
| Lancaster | 8 | .. | 8 | 2 | 2 | 4 | .. | .. | .. | 1 | .. |
| Leicester | 3 | 1 | 4 | .. | 1 | 1 | .. | .. | .. | .. | .. |
| Lincoln, Parts of Holland | 1 | 1 | 2 | .. | 1 | 1 | .. | .. | .. | .. | .. |
| " Parts of Kesteven | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. |
| Middlesex (ex. Metropolis) | 5 | 1 | 6 | .. | 1 | 1 | .. | .. | .. | .. | .. |
| Norfolk | 5 | 3 | 8 | .. | 6 | 6 | .. | .. | .. | .. | .. |
| Northampton (ex. Soke of Peterborough). | 3 | 1 | 4 | .. | 3 | 3 | .. | .. | .. | .. | .. |
| Salop | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. |
| Stafford | 1 | 2 | 3 | 1 | 2 | 2 | .. | .. | 1 | .. | .. |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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TYPHOID FEVER OF SWINE.

| | Farms or other Places. | | | Swine attacked. | | Diseased Swine. | | | | Cases which existed in previous Weeks not reported until this Week. | | |
|---|--|---|---|--|---------------------------|-----------------|-------|------------|------------|---|-----------------|--|
| | Number reported upon this Week which have been previously reported upon. | Number upon which Fresh Outbreaks have been reported to have taken place during the Week. | Total Number reported upon during the Week. | Remaining diseased from the previous Week. | Attacked during the Week. | Killed. | Died. | Recovered. | Remaining. | Fresh Outbreaks. | Swine attacked. | |
| ENGLAND. | | | | | | | | | | | | |
| COUNTY.* | | | | | | | | | | | | |
| Bedford | 2 | ... | 2 | 10 | ... | 9 | 1 | ... | ... | 1 | 3 | |
| Berks | 3 | ... | 3 | 8 | 29 | 21 | 8 | ... | 8 | 1 | 8 | |
| Buckingham | 1 | ... | 1 | 2 | ... | 2 | ... | ... | ... | ... | ... | |
| Cambridge (ex. Liberty of the Isle of Ely). | 2 | ... | 2 | 16 | ... | 3 | 1 | ... | 12 | 2 | 16 | |
| Derby | ... | 1 | 1 | ... | 10 | 10 | ... | ... | ... | ... | ... | |
| Essex | 8 | 4 | 12 | 5 | 28 | 23 | 7 | ... | 3 | ... | ... | |
| Hertford | 4 | ... | 4 | 9 | ... | 9 | ... | ... | ... | 1 | ... | |
| Huntingdon | 4 | 1 | 5 | 5 | 2 | 1 | 6 | ... | ... | 2 | 9 | |
| Lincoln, Parts of Kesteven | 2 | 1 | 3 | 3 | 13 | 13 | 3 | ... | ... | 2 | 5 | |
| Middlesex (ex. Metropolis) | 3 | ... | 3 | ... | 21 | 21 | ... | ... | ... | 1 | 3 | |
| Norfolk | 3 | 2 | 5 | 9 | 26 | 33 | 2 | ... | ... | ... | ... | |
| Northampton (ex. Soke of Peterborough) | ... | 1 | 1 | ... | 9 | 8 | 1 | ... | ... | ... | 6 | |
| Oxford | 2 | 1 | 3 | ... | 1 | 1 | ... | ... | ... | ... | ... | |
| Suffolk | 4 | 4 | 8 | 37 | 27 | 20 | 12 | ... | 32 | ... | ... | |
| Warwick | ... | 1 | 1 | ... | 1 | 1 | ... | ... | ... | ... | ... | |
| York, West Riding | 1 | ... | 1 | ... | 5 | 5 | ... | ... | ... | ... | ... | |

| FOOT-AND-MOUTH DISEASE. | | | | | | | | | | | |
|---|-----|-----|----|-----|-----|-----|-----|-----|-----|-----|-----|
| Liberty of the Isle of Ely | 2 | ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... |
| The Metropolis | 1 | 1 | 2 | ... | ... | 17 | 189 | 181 | 41 | ... | ... |
| TOTAL | 42 | 17 | 59 | 104 | 189 | 181 | 41 | ... | 71 | 10 | 58 |
| FOOT-AND-MOUTH DISEASE. | | | | | | | | | | | |
| ENGLAND. | | | | | | | | | | | |
| COUNTY.* | | | | | | | | | | | |
| Cambridge (ex. Liberty of the Isle of Ely). | ... | 1 | 1 | ... | 120 | ... | ... | ... | ... | 120 | ... |
| Essex | 1 | ... | 1 | 101 | ... | ... | ... | ... | ... | 101 | ... |
| Northumberland | ... | 1 | 1 | ... | 1 | ... | ... | ... | ... | 1 | ... |
| TOTAL | 1 | 2 | 3 | 101 | 121 | ... | ... | ... | ... | 222 | ... |

* Counties include such boroughs and burghs as are locally situated within the limits of the Counties, or, if surrounded by two or more counties, then they are included in the county with which they have the longest common boundary. Berwick-upon-Tweed is included in Northumberland.

Veterinary Department, Privy Council Office, 14th January, 1879.

CATTLE PLAGUE.

CATTLE PLAGUE appears to prevail still in Russia in several Governments bordering on Austria and Germany, and in those adjoining the Black and Baltic Seas.

The district of Tagarnog is said to be free from cattle plague, and that there is a decrease of the disease in the district of Berdianski.

In Austria-Hungary cattle plague exists in the provinces of the Bukowina, Galicia, Dalmatia, Hungary, Bosnia, and in the Military Frontier.

The cattle plague which manifested itself in Germany at the end of November last appears not to be entirely stamped out. In the beginning of this month it was reported that no new outbreaks of the disease had taken place; also that the following places had been declared free from infection, namely—Stallupöhnen, in the Government of Gumbinnen; at Wilkendorf, circle of Königsberg, in the Government of Frankfort-on-the-Oder, and in the Neu Märk Ocznitz, circle of East Sternberg; in the Government of Gumbinnen cattle plague is considered to be extinguished.

Since the first appearance of the disease up to the 7th of February the number of animals which have died or been slaughtered was as follows:—In the Government of Gumbinnen, 206 cattle; in Government of Frankfort-on-the-Oder, 1936 cattle, 1204 sheep, and 384 goats; in the Government of Potsdam, 160 cattle, 13 sheep, and 10 goats; and in the Government of Merseburg, 169 cattle, and 9 goats.

On the 7th of February four localities in the Government of Frankfort-on-the-Oder, one in Potsdam, and five in the Government of Merseburg, were still regarded as infected. Later information states that the cattle plague may now be looked on as having disappeared from the province of Potsdam.

Facts and Observations.

THE INTERNATIONAL AGRICULTURAL EXHIBITION IN LONDON.—The official list of prizes offered for live stock and produce has been issued. The premiums reach the sum total of 12,650*l.*, of which the largest proportion will be awarded

in money, but winners of the Mansion House prizes will have the option of receiving gold, silver, and bronze medals instead. The prizes are divided as follows:—Horses, 3,300*l.*; mules and asses, 140*l.*; cattle, 5,760*l.*; sheep, 1,745*l.*; goats, 60*l.*; pigs, 300*l.*; hops, 265*l.*; seed corn, 70*l.*; wool, 135*l.*; butter, 86*l.*; cheese, 360*l.*; hams and bacon, 180*l.*; preserved meats, 45*l.*; American and European fresh meat, 100*l.*; perry and cider, 80*l.*; and bees and hives, 24*l.* All the prizes for live-stock are open to foreign and colonials as well as British owners of animals eligible to compete; but it must be understood that the foreign prizes do not apply to animals from any country from which importation is prohibited by any Order of the Privy Council.

VETERINARY INSPECTOR, VICTORIA, AUSTRALIA.—Graham Mitchell to be veterinary surgeon for the inspection of stock introduced into Victoria, under the diseases in stock regulations of the 6th November.—*The Melbourne Government Gazette*, Dec. 20th, 1878.

SENTENCES ON RUSSIAN STUDENTS.—The trial of the students of the Kharkoff Veterinary Institute, arrested in connection with the recent riots, is concluded. Four of the accused have been expelled from the institute, 26 have been excluded for one year, 8 enter other institutions, and 18 have been reprimanded by the council.—*St. Petersburg*, February 4.

A SURE AND RAPID CURE FOR HICCOUGH.—Dr. Grellet, of Vichy, states that he has never failed in immediately relieving simple hiccough by administering a lump of sugar soaked with vinegar.—*Révue Méd.*

THE ALLEGED ANTAGONISTIC ACTION OF ATROPIN AND MORPHIN.—Dr. Knapstem, of Bonn, in an article in the *Berlin Klin. Wochenschrift*, No. 47 (quoted in Hager's *Pharmaceutical Centralhalle*), reports a series of experiments undertaken to test the power alleged to be possessed by morphin and atropin to mutually neutralise the effects the one of the other. These experiments show that a simultaneous administration of morphin with atropin or *vice versa* did not allow larger doses of either poison to be administered to dogs than they could support if given singly. It is possible that in cases where such immunity would seem to have been observed comparatively inert atropin may have been employed.—*Chemist and Druggist*.

THE VETERINARIAN, MARCH 1, 1879.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

ORDER OF COUNCIL RELATING TO DAIRIES, COWSHEDS, AND MILKSHOPS.

THE Order of Council, which we publish, having reference to the registration of dairymen and cowkeepers, and the regulation of dairies and places where milk is stored or kept for sale, is based on the 35th section of the Contagious Disease (Animals) Act of last session. While the Bill was passing through committee we remember that the Dairy Clauses were the most popular of all, in fact, no voices were raised against them, probably on account of the conviction, which is pretty generally entertained, that our milk supply wants looking to; those who are not practically familiar, as many of the members of our profession are, with the ordinary aspect of a dairy farm of the good old-fashioned or primitive sort, do not realise that the owners of such establishments seldom or never consume the fluid which they distribute so large; in fact seem rather startled than otherwise at the request of a visitor for a little of the produce which they naturally think must be most abundant, but which is almost unknown in the list of alimentary substances in a dairy farm.

London cowsheds are sometimes adduced in illustration of all that is ill-kept and unpleasant, but speaking from some experience of London and country sheds, we are bound to admit that while some model establishments are found in the rural districts, the majority of the cowhouses in the country are entirely abominable in their dirtiness; and on the other hand a large proportion of the London cowsheds are remarkably well kept, and some of them are, as nearly as may be, perfect.

Both in urban and rural districts, moreover, there are numerous places in which cows are kept for the supply of an important article of food, under conditions which are the

reverse of sanitary, where all the known principles of ventilation, drainage, lighting cleansing and watering, are quietly, and without remonstrance from any authority, ignored.

There is a fiction current that every cow kept in a shed is entitled to a thousand cubic feet of space in which to breathe, and that no cowkeeper can keep more cows in his shed than he has room for, calculated on that basis. If this be so, we can most positively assert that the bovine race has been for years past systematically defrauded. It might be difficult to prove from practical observation that so large a space is certainly necessary for the health of the animals, it would be perfectly easy to demonstrate that they, as a rule, manage to exist with less than half that amount, while all the theories of sanitarians relating to the deleterious effects of bad air and water, insufficient light, and accumulations of filth, are upset by the system of management of the average cowkeeper.

Under the provisions of the new order, which we understand the local authorities are putting in force with considerable vigour, many of the defects which have become subjects of chronic complaint may be remedied. The mere act of registration will be beneficial in a variety of ways, because the fact of a man having to enter his name and give some account of his premises and stock, is calculated to make him set his house in order as a preliminary step, under the impression, which will doubtless prove to be correct, that the visit of the inspector will follow in due course.

On the subject of the proposed registration of all who follow the trade of dairymen, cowkeepers, and purveyors of milk, a considerable difficulty appears to have arisen as to the definition of the terms employed. In this commercial country all classes engage in some occupations which are of the nature of trading for the purpose of profit, but it is not usually concluded that a man is a trader unless he habitually follows a certain line of trade. As man is not a

horse dealer who buys a horse and not liking it, or when tempted by a good offer sells it again, and buys another; and on the same principle, a farmer who buys a few cows for his own establishment, and when from time to time overburdened with milk or butter sends the excess to market, is not a dairyman; but whatever might be the interpretation of the terms used, there would still be a large number of persons who would occupy neutral territory.

In the Order of Council referring to dairymen, cowkeepers, and purveyors of milk, the words of the Act 1878 are closely adhered to; and as the makers of laws never attempt to interpret them, it is presumably left to the local authority in each district to determine to whom the Order shall apply. Fortunately, the Order is so framed that a too extended grasp will not inflict any great injustice. The act of being registered will not do any harm to the individual, and it may even come to be considered in the light of a distinction to be included in the list of registered dairymen under an Order of Council, even if the person so distinguished only keeps one cow, and sells a little milk occasionally.

A prominent object of the Order is to provide against contamination of milk with the infective matter of human contagion; this part of the Order is couched in general terms, and will be, we apprehend, subordinated as to its results to the more definite considerations which affect the well-being of the cows themselves, and the sanitary state of their habitations.

RABIES AND THE ROYAL BUCKHOUNDS.

OUR readers will have learned with a surprise equal to our own that, after a comparatively very short isolation, in consequence of the existence of rabies in the pack, the Royal buckhounds have resumed their work. The *Globe*, Feb. 3rd, stated that "Yesterday Her Majesty's stag hounds again appeared in public, after being shut up for rabies and frost

for so many weeks. The *Field* says that fourteen and a half were in first-rate condition at the Royal Hotel, Ascot Heath, yesterday. There was a field of about fifty, including three ladies and three of the London division, and a party of the Lancer officers from Hounslow. Soon after twelve an untamed stag was enlarged at 'Sir William Hayter's Corner,' but would not condescend to enter the forest, but went away for the Marchioness of Downshire's, over her ladyship's farms, through part of the park, and thence for Old Bracknell, and on to Binfield, where the deer took water near the Stag and Hounds, and the day finished after a pleasant hour and a quarter, the country riding heavy."

It will be remembered that several well-marked cases of rabies having shown themselves in quick succession, the professional advice went so far as to recommend even the destruction of the entire pack should other cases occur, and if not, that individual isolation for many months, and certainly throughout the whole of the usual hunting season, should be enforced. We have reason to know that while confined to their kennels the hounds gave no indications of the disease, and that this fact led to their being again taken into work. The risk, however, attending on this act is great, far too great for us, who were professionally consulted, to take any portion of it. It is right, therefore, that both the profession and the public should know that the responsibility of the act rests entirely with others, and not with us.

Reviews.

Quid sit pulchrum, quid turpe, quid utile, quid non.—HOR.

Die Echinococcen-Krankheit. By Von Dr. ALBERT NEISSER.
Berlin, 1877.

THIS brochure of 228 pages forms a veritable treatise in which the author has sought to give an exhaustive *résumé* of the facts of hydatid disease as it occurs in man. It is divided into three parts, treating of the subject generally, specially, and clinically. In the first part the history of the development of hydatids from the eggs of *Tænia echinococcus*, as made known by the experimental researches of Von Siebold, Naunyn, Leuckart, Krabbe, and others, is admirably recorded, but the author has overlooked the verification of their results by Mr. Edward Nettlehip in this country. His account of the development of the Echinococcus-bladders is well stated.

Following Naunyn, he recognises (1) the acephalocystic stage, (2) the formation of the so-called Echinococcus-heads (Scolexproduktion), and (3) the development of daughter-vesicles or 'nurses' (Ammenproduktion). The well-known opinions of Küchenmeister are alluded to, and the controversy between Leuckart and Naunyn as to the precise mode in which the scolices and secondary vesicles are formed, is carefully reviewed.

After touching upon the chemical constitution of hydatids the author speaks of their distribution throughout the parts and organs of the body. In addition to the lists published by Davaine, Finsen, and Böcker, Dr. Neisser gives a careful and instructive table of 983 cases arranged under sixteen different heads. Thus, to afford an instance of the statistical value of these tables, he states that 451 of his cases are referable to the liver, which is, we take it, 45·765 per cent. of the whole. This result very closely corresponds with that obtained from the tables separately furnished by Davaine and Cobbold. The author does not appear to possess any acquaintance with the data supplied by English writers, although, to be sure, he makes some display of the titles of several English memoirs, amongst which we recognise those of Murchison, Barker, Huxley, Fagge, &c. We doubt if he has consulted any of these in a direct manner. Speaking of the geographical distribution of hydatids, Dr. Neisser supplies a table of the proportion of cases of hydatids found in the records of *post-mortem* examinations. If these be accurately stated, the Echinococcus disease is comparatively rare in Germany as con-

trusted with England. Taking one example to illustrate our meaning, he finds that out of 369,713 autopsies made at Vienna, only 38 yielded hydatids. This is, he says, equal to 0·012 per cent. Probably there is a slight printer's error here, for by our calculation the percentage should stand 0·0102. In Berlin the proportion given is 33 cases in 4770 autopsies. As a mere closet-production, after the manner of his countrymen, this brochure is highly creditable to Dr. Neisser, but we miss any evidence either of striking originality or of special investigation. The multitudinous facts are undoubtedly thrown together in such a way as to form a valuable volume of reference. The manner of grouping the cases (*Casuistik*) is perfect; but notwithstanding Dr. Neisser's care he has omitted all mention of several useful English memoirs, and even also the recent excellent monograph by Hearn ('*Kystes hydatiques du poumon et de la Plevre*,' Paris, 1875).

We should like to see the subject of hydatids in animals treated after a somewhat similar fashion.

Extracts from British and Foreign Journals.

NATURE AND TREATMENT OF RABIES.

The special commission appointed by the *Medical Press and Circular* to inquire into the "Nature and Treatment of Rabies" lately issued its report.* The commission deal with a variety of recorded cases, and give advice as to treatment of a curative, preservative, and preventive character. Respecting prevention, the reporters say:—

The measures we recommend should have for their object not only the prevention of disastrous consequences to mankind from the presence of rabid dogs, but should also be based on humane and utilitarian principles so far as dogs and other animals are concerned. We may say that the veterinary police measures to be applied to this disease are founded on the consideration that, though it *may* be developed spontaneously in the canine and feline species, and though this spontaneous development may be more or less averted by proper hygienic treatment of these animals in a domesticated

* "The Nature and Treatment of Hydrophobia," being the Report of the Special Commission appointed by the *Medical Press and Circular*; with valuable additions. London: Baillière, Tindall, and Cox.

state, yet that perhaps 999 in 1000 cases are due to contagion alone, and that, therefore, the destruction of the contagious source or sources is of primary importance; also that rabies is not peculiar to any season, but may and does appear at all times of the year in a sporadic or epizootic form. These measures in the general interest of the community should be adopted and rigorously enforced, and owners of dogs and other domestic animals should be compelled to attend to them.

Hygienic Treatment of Dogs.

No amount of reasonable care can be considered superfluous to preserve the health of domesticated animals, and to protect them from disease and its results. Hence the hygiene of the dog is so important.

Animals should be provided with wholesome food, solid and liquid, and cleanliness cannot be too strictly enforced, their kennels should be provided with fresh straw, fine shavings, or sawdust, and their supply of water should be unlimited.

Dogs should not be needlessly excited, abused, or maltreated. If it should happen that an excited dog bites anyone, the person who excited it should be held guilty of a legal offence. This is in accordance with the Austrian law and the jurisprudence of our ancestors in this country—the Celts.

Dogs should be allowed exercise, and nothing can be more reprehensible than keeping them confined to houses for days together, or chaining them for weeks or months to a kennel. It is quite opposed to the animal's natural instincts. All quarrelsome and vicious dogs should be particularly taken care of by their owners, and neglect of precautions should bring the offender within the penal code. This is also in accordance with French law.

Diminish the Number of Useless Dogs.

In an economical point of view the diminution of the number of useless dogs is most desirable, and from a sanitary point of view is even more essential. Useless dogs are badly kept by poor people, and are allowed to run about dirty and diseased. They are a source of waste and insalubrity, as they absorb the already insufficient supply of oxygen in the miserable and badly-ventilated dwellings of their owners, and they consume a certain quantity of food that can ill be spared. Pleasure dogs kept by the richer classes are scarcely less a source of danger and extravagance, for they

appear very predisposed to rabies, whilst the food they consume forms no inconsiderable item of expense.

The evidence of countries, as Baden and Copenhagen, establishes that the imposition of a tax upon dogs is generally very effective in diminishing their numbers, and the higher the tax and the more strictly it is imposed so will the useless dogs become fewer. A measure of this kind should be resorted to. It would be most effectual in ridding the country of a number of miserable and dangerous animals. But to be really efficient the tax should be general and high, exception being only made in favour of dogs that are useful, or whose services can be proved to be absolutely necessary, such as house and yard dogs, or those employed by shepherds, or to lead the blind about. The tax should be highest for pleasure and sporting dogs, for whoever can afford to indulge in keeping such animals can also afford to pay a high tax. If, however, it can be shown that sporting dogs are necessary, then the impost might be reduced to that levied for useful animals. Dogs and bitches should be equally taxed; puppies should be sold, not given away, and all that are not purchased should be destroyed. As soon as they are weaned the tax should be demanded. The tax should be paid half-yearly. Every dog should wear a collar, with a brass plate inscribed with the name and address of the owner, and stamped with a particular mark of the police or inland revenue authorities, as a guarantee that the tax is paid, and for purpose of identification. This custom exists in Holland, and is very effectually carried out at Strasbourg. At the latter place every owner must notify his possessing a dog to the police, who furnish him with a license, duly numbered and registered. This number, with the address of the owner, is inscribed on the collar which every dog has to wear. It would be well if in all towns and villages there was a dog census, or a list of the dogs kept therein.

All stray dogs without the collar, or which have not the mark or their owner's name thereon, should be captured and sold, or destroyed immediately or after a certain period. This addressed and numbered collar is useful in the case of damage done by dogs, as every one should be held responsible for the damage done by his dog, due to his negligence or imprudence. Bitches in rut should not be allowed to wander about at any time, whether with or without the collar, as they excite dogs and lead to quarrels.

Blunting the Teeth

has been proposed with a view of reducing the dog's jaws to the same conditions as that of herbivorous creatures, whose bites are not so dangerous as those of the carnivora—so far, at least, as the inoculation of the rabid virus is concerned.

M. Bourrel, who has had a long experience of dogs and rabies, has proposed this measure, but it has never been carried into general practice.

Muzzling.

The use of the muzzle has become such a popular institution in nearly every country in which legislative measures for the prevention of injuries from dogs have been adopted, that any question as to the benefits conferred by it may be deemed superfluous by those who have not paid deep attention to the subject. The old muzzle has almost now disappeared, and we have only to consider the more modern and improved wire muzzle. The most varied opinions prevail in reference to its value. By some it has been deemed useless or worse, whilst others are satisfied that by the adoption of a properly constructed muzzle the dangers resulting from rabies might be averted. The principal French authorities incline to the former opinion, while the German veterinarians appear to favour the second. We are inclined to the opinion that the muzzle should only be worn on special occasions, as when rabies is prevalent in a locality, or when it has a tendency to assume an epizootic form, or in the case of vicious dogs. We must not forget that this muzzle cannot be an efficient safeguard unless it is, as M. Bouley says, rivetted to the dog's neck, as the manacle is to the foot of the galley-slave, and that night and day the animal should wear it, indoors as well as out-of-doors. When the disease threatens to become prevalent, or, indeed, when there is reason to believe that a mad dog has bitten several others, and these cannot be discovered, the use of the muzzle should be resorted to—not as a prophylactic, but as an adjuvant. All dogs seen in the streets of towns, or in the country, without a muzzle should be seized by the police as suspicious animals. When distressed by running the dog always respires with open mouth, and in warm weather the transpiration that takes place in this cavity from the throat, tongue, and inside the cheeks tends to keep the creature cool, and compensates for the almost total absence of this process of the skin. Therefore the front portion of the muzzle should be sufficiently accommodating as

to allow of the animal wearing it to open its mouth freely and widely.

Quarantine.

The idea of completely extinguishing rabies by establishing a quarantine of several months' duration amongst dogs is based on the assumption that the disease is only maintained by contagion, and never arises spontaneously, and that, therefore, if these animals could be confined for a certain period without any intercourse or any chance of the contagium being transmitted from those that were infected at the commencement of the measure, the pestilence must inevitably die out.

The preventive scheme proposed by Bardsley rests upon the validity of the following propositions:—1st. That the disease always originates in the canine species. 2nd. That it never arises in them spontaneously. 3rd. That the contagion, when received by them, never remains latent more than a few months. Quarantine would, no doubt, be as effectual in stamping out rabies as in stamping out any purely contagious malady, were those propositions absolutely correct, and the measure completely and permanently enforced. But, unfortunately, the disease originates in other than the canine species, and in other creatures besides the dog; and unfortunately, also, we are far from convinced that it never occurs spontaneously; on the contrary, though ready to admit that in the great majority of cases it is spread by contagion, there is evidence which tends to show that it may arise without this influence.

Mad Animals, or those Wounded by them.

The following measures should be rigorously enforced:—
1. That dogs suspected of or attacked by rabies, or one that has been bitten by a rabid animal, should not be killed at once and buried, unless it is positively ascertained that no person has been wounded by it. 2. If a person has been bitten by an animal really affected with rabies, or suspected to be affected with that disease, it should only be killed if the malady is unmistakably present. 3. If it is only a suspicious case, it is well not to kill it immediately, but to keep it confined and under close surveillance, so as to be able to verify the true state of the animal's health. If the animal should be rabid, then it must be killed and buried. 4. If an animal suspected of or affected with the disease escapes from its owner, or from a locality, or if an animal of this description is seen in a locality, the police should be immediately warned. They, in their turn, should, without

causing any alarm or fear, instruct the public, and warn them; under such circumstances, all children should be watched, and dogs and other animals ought to be confined and kept from strange dogs.

Disinfection.

All the slaughtered dogs should be buried in a place set apart for the purpose, and at a good depth; the skins should not be removed from their bodies, but should have large cuts made crossways in them; and they ought never to be thrown into ditches, ponds, or streams, as is so frequently done. All the wood-work, straw, shavings, in connection with kennels should be burnt, or thoroughly soaked with carbolic acid, Condyl's fluid, or some other powerful disinfectant. The floor of the kennel, stable, or place in which the animal has been kept, should be well scrubbed with boiling water, and covered with quicklime, or any agent noted for its power of destroying contagious matter. The same should be done with the walls of the place as high as the dog could reach. The chain that attached the animal, and other iron-work which may have been in contact with it, should be heated in the fire, and all necessary precautions adopted, as in diseases which are communicable by a fixed or even volatile contagium. With reference to disinfection, it may be worth referring to Hertwig's experiments. After giving a number of dogs the saliva and blood of rabid animals without result, he put five of them into kennels where mad dogs had been, put the collars of these upon their necks, attached them by the same chains, made them lie down upon the same straw, but yet none of them became rabid.—*The Live Stock Journal*.

YEW TREES IN BOUNDARY FENCES.

THE LATE ACTION, "CROWHURST v. THE AMERSHAM BURIAL BOARD."

WHEN one man's cattle is poisoned by eating another man's yew tree, the aggrieved one usually brings his action for damages in the County Court, if he brings one at all, and the peaceful nature of the countryman commonly induces him to accept the decision of the local Solomon as final. Such, at least, would seem to be the case, for only a few instances are to be found of the superior tribunals having been called upon to adjudicate between the owner of poisoned cattle and the proprietor of the poisonous yew. This lack of authority makes the case of "*Crowhurst v. The Amersham Burial Board*" all the more noticeable, particularly as the question involved is treated of from a fresh point of view,

It seems that about seventeen years ago the burial board at Amersham, Bucks, obtained a piece of land for the purposes of a cemetery, and fenced it round with a dwarf wall about two feet high, in which at two places there were openings filled up with iron railings, also about two feet high, on the top of the wall. In the hopes of making their enclosure oramental as well as useful, the board planted two small yew trees about four feet inside the iron railings, and if the trees had never grown we should probably never have heard of them. In the course of time, however, they did grow, and the branches protruded through and beyond the railings, so as to project over an adjoining meadow, which, two years before the alleged cause of action, the plaintiff, Mr. Crowhurst, had hired to pasture his horse in for a term of three years. Now, whether the planting of a couple of yew trees adds very much to the natural beauty of a place or not, is more or less a matter of opinion; but certain it is that the feat is not unattended with risk, owing to the poisonous qualities of the leaves, twigs, and berries. After the plaintiff had occupied the field for two years, his horse, which was feeding in the meadow, ate that portion of one of the yew trees which projected over the field, the wall and railings not being sufficiently high to prevent a horse from so eating, and died from the effects of the poison contained in what he ate. The plaintiff brought an action against the board in the Chesham County Court, and obtained judgment for £21 and costs. Had the board been a private individual, it is possible that the matter would have ended here; but, like railway companies when they are beaten by a passenger on a point involving perhaps a shilling, the board appealed, and the case came before the Exchequer Division. The County Court judge found (his finding as to facts being accepted by the superior court)—first, that the yew trees were so planted, and grew with the knowledge of the defendants, as to preclude the supposition that they came into position by mere accident; secondly, that the plaintiff was ignorant of the existence of the yew trees. The result of the first finding is, that the defendants were responsible for whatever might be the direct consequences of the original planting. As to the second, the plaintiff's knowledge or ignorance was material. Had he known of the yew trees, and had he chosen to have turned his horse into a meadow where he could have eaten of them, he would have been guilty of contributory negligence. It does not, however, appear what skilled witnesses were called at the trial to speak to the poisonous qualities of the yew tree, or what evidence was adduced to prove that the

defendants knew the yew tree to be poisonous, or that the fact is common knowledge among people having to do with cattle. The defendants' knowledge would be immaterial, because ignorance of the poisonous qualities of the tree would not diminish their responsibility for the consequences of their own act in planting the tree there. "It is," said the Lord Chief Baron, "distinctly found by the County Court judge, that 'the fact that cattle frequently browse on the leaves and branches of yew trees within reach, and not unfrequently are poisoned thereby, is generally known;' and by this finding, which is in accordance with experience, we are bound."

The question to be decided resolved itself into this: Was the act of the board in originally placing this tree, or the omission to keep it within their own boundary, a legal wrong against the occupier of the adjoining field, which, when damage arose from it, would give the latter a cause of action? Ultimately the court held that the plaintiff had such a cause of action, and the decision of the County Court judge was therefore affirmed.

The principle of law upon which the decision was based is contained in "*Fletcher v. Rylands*" (14 L.T., N.S. 526). In that case the judges said, "The person who for his own purposes brings on his land, and collects and keeps there, anything likely to do mischief if it escapes, must keep it at his peril, and if he does not do so, is *prima facie* answerable for all the damage which is the natural consequence of its escape."

The case of "*Crowhurst v. Amersham Burial Board*," it will be observed, illustrates the maxim *Sic utere tuo ut alienum non lædas*. The decision proceeds solely on the ground that the defendants had a perfect right to plant two yew trees, or two hundred if they pleased, but that if any damage to others arose from the planting, the defendants would be liable. Herein the case differs from the earlier one. In "*Erskine v. Adeane*" (L. R., 8 Ch., 756), a farmer's cattle were poisoned by eating yew leaves, through the alleged default of the landlord; and it was held that there was no implied warranty on the part of a lessor who lets land for agricultural purposes that no noxious plants are growing on the demised premises. This was an administration suit, and there were reasons why the actual merits of the case were not fully gone into; but the facts are not identical with those in the Amersham case.

In "*Lawrence v. Jenkins*" (L. R., 8 Q. B. 275), the plaintiff's cows died through eating yew leaves on the defendant's land; but the plaintiff succeeded because the injury arose from the neglect of the defendant to keep a fence

in proper repair. In the Amersham case the Lord Chief Baron pointed out that his decision in no way depended upon any question of fencing, or the correlative rights and duties arising therefrom, so that "*Lawrence v. Jenkins*" would be no authority. In "*Wilson v. Newberry*" (L. R., 8 Q. B. 274), the plaintiff failed upon a technicality, and the merits of the case were not gone into. The decision in the Amersham case seems to be grounded on common sense, and the principles enunciated in the judgment are valuable, because they will apply with equal force to anything, alive or dead, kept by a landowner upon his land, and which may in some way or another cause damage to his neighbour.

INTRAVENOUS INJECTION OF MILK IN ANÆMIA.

N. WULFSBERG has made a series of researches on animals on the effects of the intravenous injection of milk, recommended by Gaillard Thomas, as a means of preserving life in cases of hæmorrhage and other forms of anæmia. He injected about 250 grammes, and examined the blood, especially with a view to determine whether, as Donnè stated in 1844, the globules of milk were converted into white corpuscles. He found that the white corpuscles undoubtedly increase in number, but only after having first taken up—in fact, eaten—the milk spheres. He was unable to preserve the life of dogs by this means; their body weight diminished, and they died without obvious disease, and he found hæmorrhagic infarcts in the lungs. He found it to be impossible to maintain the life of animals by subcutaneous injections of fresh milk as they became atrophic. If about 75 per cent. of the estimated weight of the blood were withdrawn from dogs they bore the intravenous injection of milk well; but when large quantities were introduced they rapidly died. The injection of milk caused the sounds of the heart, which were previously inaudible, to become clear and distinct. He thinks, however, a milk injection can never supply the place of an injection of blood.

ON CERTAIN DISINFECTANTS.

MR. G. B. LONGSTAFF, M.A., M.B. Oxon., and Mr. E. H. Hare, M.A. Oxon., M.R.C.S., report in the *Sanitary Record* a series of experiments made by them with a number of

popular disinfectants. They took a quantity of urine, diluted it with water, and measured 100 cubic centimètres into each of 34 jam pots. They then added to each part the one-thousandth part of its weight of a disinfectant, making each experiment in duplicate. In two cases they added water only. The results were as follows :—

| Antiseptic, 0·1 per cent. | Day on which mould appeared. | | Day on which putrefactive odour was distinct. | |
|---------------------------------|------------------------------|----------|---|----------|
| | I. | II. | I. | II. |
| Water only | 9 | 9 | 14 | 13 |
| Terebene (Dr. Bond's) . . . | 10 | 10 | 13 | 18-23 ?* |
| Carbolic Acid (Calvert's No. 5) | None by | 75th day | None by | 75th day |
| Burnett's Fluid | 9 | 9 | 12 | 12 |
| Condy's Red Fluid | 10 | 10 | 15 | 10 |
| Turpentine | 13 | 14 | 18-23 ? | 18-23 ?* |
| Chloralum | 8 | 8 | 10 | 11 |
| Borax | 8 | 9 | 18-23 ? | 18-23 ?* |
| Cupralum (Dr. Bonds) | 8 | 8 | 12 | 12 |
| Ferralum (Dr. Bond's) | None by | 14th day | 8 | 8 |
| Sodium Salicylate | 10 | 10 | 14 | 14 |
| Sanitas (Aromatic, No. 3) . . . | 8 | 9 | 9 | 10 |
| Sanitas (Inodorous, No. 3) . . | 9 | 9 | 15 | 11 |
| McDougall's Fluid | 12 | 9 | 13 | 12 |
| Sanitas (Aromatic, No. 1) . . . | 9 | 9 | 14 | 14 |
| Sanitas (Inodorous, No. 1) . . | 9 | 8 | 15 | 11 |

PRICES OF WOOL.

THE average price of English half hogg wool for the ten years ending 1820 was $16\frac{1}{2}$ d. per lb.; for a similar period ending 1830, 12d. per lb.; ten years ending 1840, $14\frac{1}{2}$ d.; ten years ending 1850, $11\frac{1}{2}$ d.; do. 1860, 16d.; do. 1870, 21d.; in 1878, 15d.; and the average 1871-78, 20d. The average for 68 years was $15\frac{7}{8}$ d. per lb., and present value $13\frac{3}{8}$ d. per lb. The highest price was 27d. in 1873, and the lowest 10d. in 1849. The yearly averages of English hoggs and wethers was—1865, hoggs, 27d., wethers, $24\frac{1}{4}$ d. per lb.; 1866, 25d.—22d.; 1867, $20\frac{3}{4}$ d.—17d.; 1868, 19d.— $15\frac{7}{8}$ d.; 1869, $20\frac{1}{8}$ d.— $16\frac{1}{8}$ d.; 1870, $18\frac{3}{8}$ d.—15d.; 1871, $22\frac{1}{4}$ d.— $20\frac{1}{2}$ d.; 1872, $26\frac{1}{4}$ d.—25d.; 1873, $26\frac{1}{4}$ d.— $22\frac{3}{4}$ d.; 1874, $23\frac{1}{4}$ d.— $18\frac{1}{4}$ d.; 1875, 22d.— $17\frac{3}{8}$; 1876, $18\frac{3}{8}$ d.— $16\frac{1}{4}$ d.; 1877, $16\frac{3}{4}$ d.— $15\frac{3}{8}$ d.; 1878, $15\frac{1}{2}$ d.— $14\frac{1}{2}$ d. per lb.—*Leeds Mercury*.

* Some uncertainty as to exact day, owing to absence from home.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

MONTHLY Council, Wednesday, February 5th, 1870. Present, Colonel Kingscote, C.B., M.P., Ex-President, in the chair.

VETERINARY.

The *Hon. W. Egerton*, M.P., reported that he had been elected Chairman of the Committee for the year 1879. A letter had been received from the Secretary of the Royal Veterinary College, stating that the Governor complied with the wishes of the Council of the Royal Agricultural Society to obtain the services of the Inspector of the College for the members of the Society during the present year, and asking whether the list of charges would be as laid down in an accompanying scale; and also what would be the rate of payment for special reports or investigations of outbreaks of disease. The Committee recommended that the proposal of the Governors be accepted, and that the charges to members in future be as follows:—

| | | |
|---|------|-----|
| Keep of an ox per week | 10s. | 6d. |
| „ a sheep „ | 3s. | 6d. |
| „ a pig „ | 3s. | 6d. |
| Personal consultation | 10s. | 6d. |
| Consultation by letter | 10s. | 6d. |
| <i>Post-mortem</i> examination and report thereon | 21s. | 0d. |
| Visits in cases of serious or extensive outbreaks of disease, exclusive of persons and travelling expenses, per diem | 42s. | 0d. |

It was further recommended that special reports or investigations should be paid for according to the nature and importance of the investigation, or according to the scale of charges paid for an article in the *Journal*. With regard to chemical analysis, the payment should be made according to the scale applicable to subscribers to the College. Since the last meeting of the Committee, Professor Axe had reported on an outbreak of scab in sheep, and a case of lead poisoning in cattle; and the Committee recommended that the report in the latter case be published in the agricultural newspapers, viz:—

“ROYAL VETERINARY COLLEGE,
“*Jan. 13th*, 1879.

“DEAR SIR,—I beg to inform you that I visited Hobb Hill Farm on the 7th inst., and inquired into the circumstances attending an outbreak of disease in a herd of beasts the property of Mr. Handley.

“I have to report that the disease first appeared on the 1st of January, and at the time of my visit six cows had died, and several others were seriously ill. Messrs. Flower of Derby, and

Poyser of Melbourne, veterinary surgeons, had been consulted by Mr. Handley, and they were of opinion that the malady was due to poisoning by sulphuric and prussic acids.

“At the time of the outbreak of the disorder the cows were receiving as food grains, Indian meal, and hay. The grains were stale, having been collected in the summer. With a view to preserving them, they were covered over with sods and earth which had been removed from the side of the road adjoining Mr. Handley’s farm. I had an opportunity of examining a portion of the mixture of grains and meal on which the cattle were last fed previously to the outbreak, and in it was found a considerable quantity of lead-slag in a state of fine division. Similar matter was also found in large quantities in the stomachs of two cows of which I made a *post-mortem* inspection. As the roads in lead-mining districts are frequently repaired with lead-slag, the sods and earth referred to may be regarded with suspicion of containing the poison. The symptoms exhibited by the animals during life were strikingly illustrative of lead poisoning, and the *post-mortem* lesions likewise point to the same conclusion. Regarding the disease as the result of lead poisoning, I consulted with Mr. Poyser, who was in attendance, and suggested the course of treatment to be pursued. This morning I have received a letter from Mr. Wood, of Wirksworth Hill, informing me that no more deaths have occurred. The stomachs of one of the cows are now being analysed, and the result will no doubt be made known to you by Professor Tuson when the analysis is completed.—I am, yours faithfully,

“J. WORTLEY AXE, Professor.

“H. M. Jenkins, Esq.”

“CHEMICAL LABORATORY, ROYAL VETERINARY COLLEGE,
“Camden Town, N.W., February 3rd, 1879.

“SIR,—In reference to the suspected case of poisoning sent through you from J. B. Wood, Esq., to the Institution for investigation, I beg to report as follows:—

“On the 12th ult. Professor Axe handed to me a basket, in which I found six parcels and part of a linseed cake. The baskets were respectively labelled:—

“‘A.—Sample of Indian meal and grains as used before disease broke out, but washed.’

“‘B.—Sample of earth similar to that used for covering the grains; residue of $\frac{1}{4}$ bushel after repeated washing.’

“‘C.—Sample of Indian meal after repeated washing, that sent being residue of about $\frac{1}{2}$ bushel.’

“‘D.—Sample of grains after repeated washing of a basketful.’

“‘E.—Sample of the heap of Indian meal and grains used just before disease appeared, after washing; residue of one cow’s feed, *i.e.* about a bucketful.’

“ ‘F.—Sample of earth got from same place as that used for covering grains, but washed.’

“ On the 21st ult. Professor Simonds handed to me four stomachs of a cow.

“ The materials contained in each of the parcels and the cow’s stomachs were separately submitted to chemical analysis, when I detected a considerable quantity of lead in the parcel marked ‘E,’ but this metal could not be discovered in either of the other parcels.

“ Large quantities of lead were likewise found by analysis in the cow’s stomachs ; in fact, fragments of the supposed poison were picked out of the cells of the reticulum (second stomach). When these fragments, as well as others of a similar appearance detected in parcel ‘E,’ were analysed, they were in both instances found to consist of galena, which is chemically a native sulphide of lead.

“ The sample of linseed-cake was not examined, as I thought that in all probability the results of its analysis would not throw any light on the cause of the death of Mr. Wood’s animals.—I am, sir, your obedient servant,

“ RICHARD V. TUSON, F.I.C., F.C.S.,

“ Professor of Chemistry and Toxicology in the
“ Royal Veterinary College.

“ To the Secretary Royal Agricultural Society,
“ Hanover Square.”

The report of the Examiners appointed to test the qualifications of the students competing for the Society’s veterinary medals and prizes had been received, and the Committee recommended that the Council of the Royal College of Veterinary Surgeons be asked to draw up a modified scheme for the consideration of the Council of the Society at their next meeting.

The Committee also recommended that a communication be made from this Council to the Privy Council, urging upon the Government the importance of immediately placing the United States of America under the provisions of the Act which provides for the slaughter of foreign animals at the place of landing.

The *Hon. W. Egerton* added, with reference to the last paragraph of the Committee’s report, that the evidence before the public had led the Committee to recommend that the United States should be placed under the provisions of the Act of 1878 relating to slaughter at the port of landing. It was perfectly true that in the vessel which brought over the animals suffering from pleuro-pneumonia there were Canadian animals, but it was believed that in future Canadian animals would be shipped from ports within the Dominion, probably Halifax, instead of Portland, and the Committee had therefore not included Canada in their recommendation.

Mr. Dent said that he would not formally move the rejection of the last clause of the report, but would merely express his regret

that it was thought advisable to make the proposed representation to the Privy Council. He foresaw that if those recommendations were carried out it must end in all animals being slaughtered at the port of debarkation. But at the same time he would like to register his protest and throw out one word of warning. If trade revived, as he hoped and believed it would, the restrictions on the trade in meat would be so great that he was afraid it would almost be at a famine price, and that an outcry would be raised throughout the country which would result in the Act being repealed. At this moment there was a decided revival of trade in America, and that revival was mainly owing to two successful seasons in agriculture. A revival of trade in America always signalled a similar revival of trade in England, and he thought they should very carefully guard against doing anything which would tend to check it. The agriculturists of America were very large consumers of manufactured articles, and the same remark applied to English agriculturists. He did not see how it was possible to draw any line between the United States and Canada, and he should have been glad if the Veterinary Committee had seen it right to leave the matter entirely in the hands of the Privy Council. His own belief was that the restrictions imposed prior to the passing of the Animals Diseases Act were quite sufficient to keep disease out of the country. We were no more free from disease now than we were before the new regulations came in force.

Mr. Jacob Wilson sincerely hoped that the report presented by the Veterinary Committee would be adopted in its entirety, especially as it included their recommendation with reference to the outbreak of disease at Liverpool. He could assure the Council that there was a very strong feeling of alarm throughout the country at this outbreak; and considering that the farmers of England were now subjected to very great restrictions, he thought it was the duty of the Council, as representing the agricultural interest of the country, to express their views to the Privy Council. It was quite possible that the Privy Council had already initiated the action suggested by the Committee, and in that case it would be gratifying to the Lord President to know that he was backed by the agricultural opinion of the country. If, on the other hand, the Privy Council were in a state of doubt as to what ought to be done under the circumstances, the opinion of the Royal Agricultural Society might be of value in aiding them to come to a decision. Therefore, on whatever grounds the matter was put, it was desirable that some expression of opinion should be made. It had been no secret whatever that pleuropneumonia had existed to a considerable extent throughout the United States of America for some years past, and the other countries of Europe were anxiously watching the action which the Government of this country would take in reference to this outbreak. As to the general trade of the country, he did not for a moment believe that it would be interfered with by the propo sa

of the Committee. The dead meat trade was extending every day, and the live stock trade had also been considerably developed lately. The Veterinary Committee did not propose to interfere with either trade, but suggested that the live animals imported should be slaughtered at the place of landing. He thought it an exceedingly fortunate thing that this outbreak of disease had taken place before further arrangements had been made for the greater extension of the traffic in American live cattle. He hoped that the Council would speak with no measured voice, and would show the farmers of the country that their interests were being upheld by the Royal Agricultural Society of England.

Mr. Bowen Jones thought it would be interesting to have a little additional information in reference to the outbreak of disease at Liverpool, and, with the permission of the Council, he should like to ask the chairman of the Veterinary Committee if a detailed account of the outbreak had been placed before them. For instance, he would like to ask if the animals were moved from the quay by order of the Privy Council, and also whether the same quay was used for the reception and landing of other animals, and also of the Irish stock coming to England, as, if so, it appeared to him that a large amount of danger must be thereby incurred.

The *Hon. W. Egerton* replied that the animals suffering from pleuro-pneumonia came in a mixed cargo of American and Canadian animals, and, although the latter were recognised by the Canadian dealers themselves, the Inspector said he could not distinguish them from the American cattle. With regard to the slaughter of the animals, there was no provision at Liverpool or Birkenhead for their slaughter on the quay. At present all the foreign animals were landed together, as he understood, but the Irish cattle were received at a different landing-place.

Mr. Jacob Wilson added, that the animals actually diseased were not moved, but killed on the spot; but the animals in contact were moved and killed in slaughter-houses in the town.

Mr. Bowen Jones looked upon the outbreak as a matter of the greatest importance to agriculturists throughout England. With regard to the recommendation made by the Committee, as far as it went, he entirely sympathised with them, but it was a question in his mind whether the Committee had gone far enough, for he thought it would only have been rational if they had included the Dominion of Canada as well as the United States. He added that they must continually urge on the Privy Council to carry out in its true spirit, and to the letter, the Act passed last session. This Act he regarded as a compromise to please the masses in the large towns, who were uneducated upon the subject.

Mr. T. Aveling was adverse to the proposed communication being sent to the Privy Council. He thought that, on the one hand, the Council had done enough in the matter of legislation, while, on the other, they were doing more than enough to encourage the importation of foreign animals.

Colonel Kingscote most thoroughly agreed with the recommendation of the Veterinary Committee, and would be extremely sorry if the Council did not adopt it. The present outbreak of disease was a danger that had been anticipated for some time. There was an honorary member of the Society in the room—Mr. Fleming—who had studied the question very deeply. Mr. Fleming pointed out to him some months ago that this disease of pleuro-pneumonia had been for years past raging in America, and the great danger we should sustain in allowing animals to come into this country without being slaughtered at the port of landing. The Act of Parliament declared that when there is disease in any country, that country should be scheduled, and as they were naturally alarmed by this outbreak of pleuro-pneumonia, they asked the Government to prevent, not American meat, but this disease from coming in.

The report was then adopted.

CENTRAL VETERINARY MEDICAL SOCIETY.

THE ordinary meeting was held on Friday, January 17th, 1879, the President in the chair.

The *Secretary* exhibited a calculus, the chief features being a combination of the whole form of calculus, viz., oat-hair, triple phosphate, and crystalline. The subject was an aged job horse, who passed no fæces during some six weeks other than what he had removed. The existence of a calculus was assumed, but could not be detected. On death a rupture was found which reached to the commencement of the rectum. He also showed a kitten having a double body and right legs. He also named a case where he had successfully removed the elongated part of a tooth on one side and chipped away eleven pieces from another on the other side of the mouth by the aid of Thompson's shears. He did not cast the horse.

The *President* next referred to his experiments for determining the nature of the skin epizootic, and stated that since then an eruption very similar to the disease had developed in the inoculated horse, generally affecting the thighs as well as the selected part. And that in another case a contaminated rug had produced no positive result; in another, believing heat and moisture essential, he had submitted an animal to exertion while clothed with a contaminated rug. This horse became the subject of the disease. He had set himself to discover whether there were parasites in the disease, and without speaking too positively it might be said that he had formed an opinion of its being due to a vegetable parasite.

Mr. Hill (a visitor) had had a number of cases in his district,

and regarded it as a low form of ringworm. He had treated them with mercurial ointment and zinci oxyd. He had also observed it in a stable where there was an absence of heat, and again in animals exercised in a straw yard where they lathered after exercise.

Mr. Moore, sen., wished to know from the chairman when the eruption came out ; so far as he had seen, it much resembled equine pox, and its contagiousness supported that theory ; it also affected parts where the rug did not lie. Did it as a fact come from America or Germany ? The Germans said it came from Switzerland.

In reply, the *President* said the first change which takes place was infiltration of the dermis in circumscribed areas, followed by superficial inflammation, and from the absence of constitutional disturbance, it certainly might be said not to accord with equine variola. And as horses and their clothing were often taken to different parts of the country, infection was easy. If it could be shown to have been introduced here by American purchases, as some large buyers say, it would become a matter for the consideration of the veterinary department of the Privy Council. It was a fact that its spread and extent closely related to the traffic in Canadian horses.

Messrs. Charles Sheather and Thos. Chesterman were duly elected, and the meeting adjourned.

Present 19 Fellows and 5 visitors.

JAMES ROWE, *Hon. Sec.*

The next meeting was held Thursday, February 6th, at 7 p.m.

Mr. Charles Sheather related a case of rupture of the lesser curvature of the stomach, a sequel to case of colic. In the later stage of treatment he gave charcoal in a draught, which was returned by the nostrils ; seeing this effect, which lasted till death, he repeated it and watched the animal. At the *post mortem* there was muscular rupture ; the stomach contents were fluid.

The discussion was more on the negative evidence of prior disease the parts offered, and the possibility of vomition, *Mr. J. Mavor* giving an instance of vomition in a horse attended with recovery, and *Mr. Hancock* mentioning two others. *Mr. Sheather* ascribed death to over-distension.

Mr. Fleming, next quoting instances of the case where horses die from eating the soil when on the picket lines, said he had two trays of pebbles and rough stones to show that were voided by a dog of *Baroness Coutts'*, who constantly swallowed them. One day he was watched and confined, when in the course of twenty-four hours he voided a mass of stones weighing 9 oz. 1 dr. The

dog, which weighed 22 lbs., was alive and well ; he was unaware of any case where so many were passed in so short a time.

Professor Pritchard confirmed this statement, having also seen the dog.

Mr. Fleming also showed some ancient horse shoes. One obtained from York belonged to an early Roman period, an undulating border shoe, with a large cavity for a large headed nail, a curious thing being these are all of one size, 4×4 , which served to prove the smallness of the horses. Other specimens were found deeply buried in Hendon, dating probably from the 13th or 14th century. Also another shoe, a barbarous one, possibly concave ; he marvelled how it could have been used. He likewise exhibited a double-headed foal (head portion) where the middle right and left orbits were fused, as it were, but the eyes remained independent. Such monstrosities were common in the cow. The shoes were handed round and well examined, the rough-shaped shoe giving rise to some discussion.

Mr. A. Charles had a curiosity to show, it being the penis of a whale. He believed there were only two others in the country, they being smaller, and deposited in the Royal College of Surgeons. This measured six feet nine, and weighed, being dried well, between 10 and 11 lbs. ; its age and history were unknown, having been brought in by a sea captain ; he had doubt of its genuineness, and should present it to the Royal College of Veterinary Surgeons.

Mr. A. Brown showed the two fore feet of an aged pony, which had for five or more years suffered from navicular lameness and been worked the while, till it was destroyed from motives of humanity. The ossific matter was mingled with the fibrous flexor pedis tendon. In the fellow foot the disease had proceeded to ulceration. Considered the specimen unique.

After the consideration of this specimen, as the evening was well advanced, it was agreed to hold over the President's intended communication, and call another meeting the following week to receive it. The meeting then adjourned.

Present 17 Fellows and 2 visitors.

JAMES ROWE, *Hon. Sec.*

THE SCOTTISH METROPOLITAN VETERINARY MEDICAL ASSOCIATION.

THE December Quarterly Meeting of this Association was held in the London Hotel, Edinburgh. Professor Baird, of the Dick Veterinary College, presided, and there was a fair attendance of members. The following gentlemen were elected office-

bearers for the ensuing year:—President, Mr. R. Rutherford, Edinburgh; Vice-presidents, Mr. Aitken, Edinburgh, Mr. Balfour, Kirkcaldy, and Mr. Mitchell, Bathgate; Secretary and Treasurer, Mr. John McFadyean, Dick's Veterinary College (re-elected).

The Secretary reported that, in accordance with the resolution passed at the previous meeting, he had issued circulars to the members of the profession in Scotland, soliciting subscriptions towards the Fleming Testimonial Fund. He regretted to state that the appeal had not met with so liberal a response as might have been anticipated. The subscriptions which he had received were as follows:—Professor Walley £1 1s., Professor Baird £1 1s., Mr. J. R. V. Dewar, Midmar, Aberdeenshire, £1 1s., Mr. Mitchell, Stranraer £1 1s., Mr. Archibald Baird, Edinburgh, £1 1s., Mr. J. McFadyean, £1 1s. The Secretary was instructed to remit the amount to the Treasurer of the Fleming Testimonial Fund, London.

A motion was carried to the effect that copies of the rules and regulations of the "National Veterinary Benevolent and Mutual Defence Society" be obtained and circulated among the members of the Association.

The Secretary gave notice that at the next meeting he would move the following resolution:—"That this Association take steps to further the return to the Council of the Royal College of Veterinary Surgeons of members to represent the Scottish section of the profession."

Mr. Rutherford related the history of a case of open hock-joint in a mare, which had been successfully treated by means of shellac dressing. He also drew attention to a case of the so-called azoturia, in which he attributed very beneficial results to the administration of chloroform to prevent struggling and allay the severe muscular spasms.

Professor Walley expressed an opinion that the term "azoturia" was a misnomer, and did not indicate the true pathology of the affection, the symptoms of which, he contended, were purely that of acute uræmia. He thought it an important part of the treatment to promptly evacuate the bladder and inject a dilute alkaline solution. This had by his recommendation been done in the case alluded to by Mr. Rutherford.

Mr. Robertson, Kelso, stated that in his experience the disease usually had a fatal termination if paralysis set in before the animal could be got to the stable or medical aid summoned, and that the administration of cathartics had been attended with the greatest success. He thought that further investigation into the pathology of the disease was desirable. It was generally stated that there was no albumen present in the urine, but in several

analyses made for him by Professor Dewar albumen was found in considerable quantity.

Professor Walley exhibited a fibrous tumour weighing 36 lbs., which had been removed from the abdominal cavity of a sheep. It was of an enormous size, and on section was found to have undergone a considerable amount of softening in its central portion.

Mr. Robertson, in continuation of the paper on "Arthritic or Joint Disease in Young Stock," read by him at the previous meeting, proceeded as follows :

In any attempt to arrive at a correct estimate of those causes which are the chief factors in the induction of this morbid condition, it is certainly more advisable to take a large or liberal view of the subject than to confine our attention to a few isolated cases of its manifestation ; to those, in fact, which admit of explanation probably by considering the action of more than one adverse condition. No doubt cases exhibiting in most of their features the characteristic symptoms and changes of this too well-known and fatal malady are often, or it may be regularly, met with every season and amongst all herds, and may be capable of explanation by reference to some peculiar idiosyncrasy or constitutional defect of individual animals, operated on by very diverse extrinsic influences. This, however, is not the condition we are called upon to consider. When large numbers of animals, possessing very varied individual constitutional peculiarities, and subject to much variation as to external influence, become the subjects of special organic changes, the causes of this morbid action, we apprehend, must be looked for in some special and largely operating adverse influence.

In the remarks which I formerly made regarding the pathology of this disease, you may recollect that I directed your attention to several received opinions as to the nature of the malady, opinions entertained by those who, considering their knowledge and opportunities, may be regarded as best able to form an opinion thereon. First, we noticed that view which regards this arthritic disease as essentially rheumatic in its nature. Secondly, that which regards all the structural changes, &c., as resulting from, or but the natural sequelæ—under certain conditions—of, a scrofulous diathesis. Thirdly, the one in which it is looked upon as simply metastatic pyæmia, the result of prevalent omphalo-phlebitis and umbilical thrombosis. Fourthly, that estimate of it which gives it rather the character of a developmental disease evidencing a want of formative power in tissue production and elaboration, and intimately connected with a faulty regimen of one or both parents. The two latter views of the nature of enzootic arthritis of young stock are those

which at the present time probably receive the greatest amount of support, and it is to these, the pyæmic and the dietetic, that I would more particularly request you to look at this time, not because I regard the rheumatic or scrofulous as undeserving of attention, but rather because of our limited time, and the greater probability or present belief, that in one or other of these views we will find the true cause of this malady.

As I have already said, there is no doubt of the existence of metastatic pyæmia in the great majority of the cases of this arthritic disease, and particularly so in all outbreaks of an enzootic type. It is also equally certain that accompanying, or it may be preceding, the general and local arthritic symptoms, we very frequently find inflammation of the veins and other structures of the umbilical cord, and occasionally, also, thrombosis of the umbilical and other veins. That the origin of this morbid condition of the structures of the umbilical cord, and those other changes in the general vascular system, may in certain instances owe their existence and have as a starting-point the inoculation with septic matter through the medium of an open umbilicus, we are free to admit; but that in every case this inoculation is the cause and origin of the disseminated abscesses, and the state of general pyæmia, I must be allowed to say that to my mind there is not as yet sufficient evidence to place this conclusion beyond doubt. If to inoculation alone we are to look for the origin of omphalo-thrombo-phlebitis, diffuse abscesses, and general suppurative action, how are we to account for, and to what cause are we to look for, a similar condition in the fœtus during intra-uterine life?

Again, many cases may be observed where both the constitutional and local symptoms of the disease are well-marked, and where the structural lesions peculiar to every well-marked outbreak are present, including the usual tissue changes within and around the articulations, multiple abscesses in the liver and spleen, hyperplasia of lymphatic glands, thrombosis of large and small veins, alterations in serous membranes, &c., with an absence of any well-marked change in the umbilical cord. If the inoculation from without by septic material through the medium of the umbilicus, resulting in purulent omphalo-thrombo-phlebitis, diffuse abscesses, and a state of general pyæmia, is to be regarded as the only source, and is indicative of the true nature of this enzootic arthritis of young stock, we should hardly expect that its appearance amongst these young animals would be so frequently accompanied by so many marked and serious conditions of ill-health in the breeding animals, their dams, as it really is. Although the evidence in the support of the pyæmic origin, starting from inoculation of this arthritic disease, is powerful and well assorted, and although it is at the present time well handled and

supported by some of the ablest scientific veterinarians, I must say that at the present time I am not so satisfied that we are perfectly correct in assigning to it this and no other origin, or even in placing this external septic influence in its power of operation above the other, as I was in 1863, when my attention was first particularly directed to it. It seemed rather that the weight of evidence is pointing in the direction of diet as the source to which we ought to look for the chief cause of the disease. That we ought to regard it as a disease of mal-nutrition, having its origin during intra-uterine life, closely associated with or dependent on an unhealthy condition of one or both parents; this state of ill-health, again, being the result of a faulty dietary.

There are several lines of argument in support of this view, which might profitably be considered. I will, however, at this time merely direct you to give some little attention to two of these. 1st. The fact that in all well-marked enzootic outbreaks of this disease among sheep, the ewes are rarely if ever in a state of well-established or robust health; very often they are sufferers to a great extent from serious systemic disorders. 2nd. That this particular arthritic disease can be produced at will in lambs by a particular dietary of the ewes. Anything strikingly abnormal in connection with the ewes where arthritic disease has occurred amongst the lambs, may not appear until after parturition; but immediately succeeding the accomplishment of this act, and coincidently with the appearance of disease in the progeny, it is an exceedingly common thing to meet with serious and extensively distributed disease in the former. Malignant parturient fever has been noted by some observers; in my own experience the morbid conditions have been chiefly associated with the assimilatory system, anæmia with structural alteration of the liver being the most common and extensively distributed. Neither this diseased condition, nor these structural alterations, can be regarded as purely post-parturient changes. Attention once directed to the subject by the occurrence of a few cases, a very cursory examination of the entire flock will generally satisfy any one only moderately skilled in the management of these animals that their condition is the reverse of satisfactory. The diseased condition only culminates with the act of parturition as a rule, although there are many that succumb to the systemic weakness during the latter weeks of gestation.

From observations and the notes which I have kept of certain flocks, I feel satisfied that the general debility from anæmia, and the structural changes in the liver, originate at a period long antecedent to parturition. That breeding and pregnant animals, so decidedly anæmiated and exhibiting so marked hepatic disease, should give birth to weak and structurally defective progeny, is

not to be wondered at. That lambs born of ewes so circumstanced should become the subjects of enzootic arthritis, in which a marked feature is the existence of badly developed and ill-elaborated tissue, the elements of which are prone to retrogressive and degenerative changes, seems only the natural result of the law "that like produces like." It is rather interesting, too, to note that many changes and abnormal conditions observed in the vascular system of the lambs suffering from arthritic disease seem but the counterpart of those we meet with in their dams. Bollinger and those who hold with him lay great stress on general and particular thrombosis as a diagnostic feature of this disease in all young animals; now it is not uncommon to find in those ewes which have sunk anæmiated, either before or after parturition, thrombosis of some of the larger veins, as the iliacs and cavæ. This condition may be either partial or complete, while that the masses of fibrin plugging the vessels are not *post-mortem* results seems most probable, both from the character of the coagula themselves and the condition of the walls of the blood tubes. It is not meant to be asserted that in every outbreak of this malignant joint disease in lambs, the ewes will invariably be found sufferers from anæmia and organic disease of the liver; still I have no hesitation in saying, that in every well-marked inroad of any particular flock, the general health and constitutional vigour of the ewes is below par. The particular forms in which this want of vigour shows itself may vary. I have most frequently seen it developing in some disturbed or diseased condition of the assimilatory systems. In support of the assertion which I have made, that arthritic disease in lambs may be produced at will by a particular dietary of the breeding ewes, I will endeavour shortly to give you the account of the treatment, during a few seasons, of a rather large flock of high-bred Border Leicesters, together with a simple statement of the diseases occurring at parturition, and an idea of the death-rate in both ewes and lambs. I may also tell you that any deviations from the ordinary treatment of breeding ewes were undertaken with a view to the prevention of disease in both ewes and lambs. The lands on which these sheep were kept were in high condition, manurially rich; no grasses were grown on the lands but Italian ryegrass and clovers. From the state of cultivation, the grass on which the ewes were pastured during winter was invariably rough, rank, and full of growth; on these pastures they were chiefly kept. During spring they might have some turnips on the breaks, and at lambing the roots were laid down to them on grass. All ewes which had been on these lands for two or three years were sufferers from hepatic disease, in the older animals complicated with ascites. Every year—that is, every year until the modifica-

tions of diet, to be presently mentioned, were attempted—there was at parturition a very serious loss of both ewes and lambs. The causes of death in the latter were—1st. This arthritic disease we have been considering in conjunction with purulent omphalitis. 2nd. Congestive fever, with occasionally local blood extravasations. In the former it was almost invariably anæmia, with structural disease of the liver and an occasional outbreak of parturient fever.

After long observation, much inquiry, and thought, I felt satisfied that the chief cause of the excessive fatality amongst the lambs was mainly to be attributed to the condition of the ewes, and that this again was largely influenced by their dietary during gestation. Acting upon this conviction means were taken, in late autumn, to have the pastures on which the ewes were chiefly to be kept during the winter “run up,” *i. e.* to have the grass well eaten down; on this the ewes were placed in rather large numbers, so that the plants would have little chance of attaining to any luxuriance while they remained there. On this grass, however, the ewes were dependent only to a very moderate extent for their support. This was supplied to them chiefly by a mixture of hay and oat straw cut together, and, as circumstances seemed to indicate, a proportion of some cake and other artificial food. As parturition approached, a moderate supply of turnips was allowed, which was continued for some time when with their lambs in young grass. When these conditions were followed out with anything like faithfulness, the state of matters at parturition was very much more satisfactory than under the usual routine. The number of cases of arthritic disease was reduced to a minimum, while the death-rate of the ewes could be looked upon without positive alarm. Once when the lambing season had been got through with remarkably little loss amongst both ewes and lambs, a return was made next winter to the usual full feeding on winter-grown grasses with no artificial food. This was succeeded by a spring showing an unprecedentedly high death-rate amongst both lambs and ewes. The causes of this loss were the same they had ever been when the same treatment had been pursued. It is not, however, entirely through the medium of the breeding and pregnant animal that faulty dietary seems to operate in the production of defective and ill-elaborated tissue-formation in the young. There seems good reasons for believing that a like train of influences are imparted to our male stock animals by want of a correct appreciation of the dietetic conditions necessary for the development and maintenance of perfectly healthy animal existence.

There can be little doubt that the best of our male stock animals, particularly those of the varieties in the several classes

which by general consent are regarded as the most highly developed and improved, are in much pertaining to the constitutional vigour and powers of procreation not a little impaired by the system of dietary to which they are subjected. It is not to the developing or perfecting of the best qualities of these several animals, or of the particular species, that attention is as a rule chiefly directed, but rather to the production of simply fat animals. We are well aware that fat tends to obscure much that may be wanting in external conformation in exhibitions and show-yards.

At this point Mr. Robertson had, through lack of time, to bring his paper to a close.

In response to a desire which was generally expressed he consented to continue his remarks at a future meeting, and the discussion on the subject was, therefore, till such a time adjourned.

J. McFADYEAN, *Secretary*.

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

THE usual quarterly meeting of the above association was held at the Blackfriar's Hotel, Manchester, on Thursday evening, January 16th, 1879. Tedbar Hopkins, Esq., President, in the chair. The following gentlemen were present:—Dr. A. Gamgee, Owen's College, Manchester; Professor Pritchard, London Veterinary College; Messrs. P. Taylor, Tom Taylor, John Lawson, W. A. Taylor, M. J. Roberts, E. Faulkner, Bernard Wood, J. B. Wolstenholme, A. Banks, and E. Houldsworth, of Manchester; Mr. Talbot, of London; Messrs Polding and Briggs, of Bury; W. Dacre, M. Greenhalgh, and Dr. Renshaw, of Altrincham; J. B. Taylor, Ashton; E. Woolner, Todmorden; B. Marshall, Knutsford; Mr. Lurquesim, of Warrington; A. Darwell, Northwich; Mr. Thomas, Oldham; Messrs. Hutcheon, W. Leather, J. Welsby, M. Moore, G. Morgan, W. W. Townson, of Liverpool; W. Whittle, Mosley; and Sam. Locke, the Ssecretary.

Letters of excuse were received from Professor McCall, W. A. Cartwright, T. Proctor, W. G. Schofield, M. E. Naylor, G. H. Darwell, R. Reynolds, Jas. Howel, A. Lawson, Thos. Greaves, and W. Woods.

The minutes of the last meeting were read and confirmed, after which the Secretary, in the absence of Mr. Tom Taylor, nominated two gentlemen as members of this association, viz. Finley Dunn, Esq., 2, Portland Square, London, and T. A. Dollar, Esq., 56, New Bond Street, Oxford Street, London.

The President said,—I cannot allow this meeting to pass without mentioning to you that we have lost one of our members by death. Mr. Alfred Challinor has now passed away. You will all remember his kindly, genial character, his agreeable manner, and how much pleasure it gave every one who knew him to have him with us. He has gone and we shall never see him here again, and we shall only be doing our duty if a letter of condolence be sent to his widow. We have not only lost a friend, but a valuable member of the profession. Seconded by *Mr. Whittle* of Mosley.

Mr. Whittle proposed that all liabilities of the association be paid, and if the Treasurer had not sufficient monies in hand, he was to draw from the bank account. Seconded by *Mr. P. Taylor*.

The President then introduced Dr. A. Gamgee, from Owen's College Manchester, who had kindly promised to read a paper "On the Appreciation of the Graphic Method to Physiological and Pathological Investigations."

Mr. President and Gentlemen,—You will allow me, in the first place, to say that it is with much pleasure that I come here this evening. I feel very great interest in the veterinary profession. In the second place, if I had another inducement to come here with pleasure it was the feeling that I had been asked to come by Messrs. T. Taylor and Locke, from whom I have received many acts of kindness. I trust members will excuse me if I have come to some extent unprepared with an elaborate lecture; my time is very much taken up with my duties in Owen's College, and I am very much engaged in literary work. It occurred to me, however, that the members of this association might be interested if I merely came before them, and drew their attention to some experiments by the science of the graphic method. He then spoke of the important and rapid advancement which physiology had made during the present century, and he endeavoured to trace the causes of it. It could not be due to the superior acuteness and energy of modern investigators, nor altogether to the greater number of them at present devoted to the work of research. For if we look back to the history of the seventeenth century, we find eminent physiologists of the highest ability, who would compare very favorably with the physiologists of the present day. What recent physiologists could fairly claim was the merit of having imparted to physiological research a precision by the introduction of the graphic methods of physical investigators. Professor Gamgee proceeded to illustrate the graphic method by experiments with the muscle and nerve of a recently killed frog. A frog's muscle was so prepared that when an electric shock was sent through its nerve

the muscle contracted and lifted a lever, the point of which made a mark upon a sheet of paper. The curve drawn by the lower point was a permanent record of the act of contraction, and a study of it brought to light very important facts. Thus, the muscle did not enter into contraction the very instant of the application of the electrical stimulus, but a "brief interval elapsed, called the latent period," between stimulation and contraction.

He further illustrated the graphic method as applied to those parts of physiology more closely connected with modern practice, viz. to the physiology of the circulation. He described the methods of accurately estimating and recording the blood pressure, which was devised by Hales, Poissenille, and Ludwig, and exhibited the hymnograph of Ludwig. He also exhibited the sphygmograph for recording the movements of the pulse in man, and explained the nature of the curves which are obtained by means of it. He described the cardiograph for recording the movements of the heart against the chest-wall, and took a tracing by applying the instrument to the chest-wall of a small dog. In order to explain the meaning of the tracing, Professor Gamgee described the experiments of Marey and Chaveau with the horse's heart, in which flexible india-rubber bags were passed down the veins and arteries into the auricle and ventricle of the heart. Each bag was provided with a tube, connected with a drum, supporting a lever. When the auricle or ventricle contracted the bag in its interior was squeezed, and the air in the drum connected with it was expressed. Thus the lever was raised, and by an appliance, like that described in the experiment with the frog's muscle, was made to write upon a paper surface.

The Professor explained at great length those experiments to the edification and pleasure of all present. A cordial vote of thanks was accorded him, and he very kindly promised at some future date to read another paper.

Mr. W. A. Taylor then proposed *Mr. W. Dacre* as president for the ensuing year. Seconded by *Mr. John Lawson*, and carried unanimously.

Mr. Dacre said—In accepting the office of president of this association, I do so with very great pleasure. For some years I have taken the deepest interest in it, and I have endeavoured to make the society one of use to us. I have always tried, with the secretary, to get papers read which were practical, and upon which we could have a discussion which would be of lasting benefit to us. I just rise with these few words to thank you most sincerely, and I give you my word that the honour and success of this of this society shall not fail in my hands if I have your support in my term of office.

Mr. Peter Taylor proposed for re-election *Mr. Sam. Locke* as secretary. Seconded by *Mr. T. Hopkin*, and carried.

Mr. Peter Taylor proposed for re-election *Mr. A. Lawson* as treasurer. Seconded by *Mr. W. Whittle*, and carried.

Mr. M. G. Roberts proposed *Mr. T. Hopkin*, *Mr. John Lawson*, and *Mr. W. A. Taylor*, as vice-presidents. Seconded by *Mr. Sam. Locke*, and carried.

A vote of thanks to the President closed the proceedings.

SAM. LOCKE, *Hon. Sec.*

YORKSHIRE VETERINARY MEDICAL SOCIETY.

THE annual meeting and dinner for 1879 were held at the "Queen's Hotel," Leeds, on Friday, the 31st January, the President, *Peter Walker, Esq.*, in the chair. The following members were also present, viz. Messrs. *James and Joseph Freeman*, *M. E. Naylor*, *T. Greaves*, *J. W. Anderton*, *John Cuthbert*, *J. H. Ferguson*, *G. W. Schofield*, *R. W. Murdoch*, *J. L. Faulkner*, *D. Spillman*, *T. Pratt*, *Parlane*, *Walker*, *Professor Axe*, *J. E. Scriven*, *Frederick Danby*, *P. Deighton*, *George Carter*, *S. Beeson*, and the Secretary. Messrs. *W. A. Taylor*, *W. Dacre*, and *T. Hopkin* were present as visitors.

Apologies for non-attendance were received from *Professor Williams*, *E. E. Dray*, *John Fryer*, *J. S. Carter*, *John Freeman*, *D. R. Sowerby*, *J. M. Axe*, *C. Patterson*, *W. Lodge*, *John Schofield*, *J. Bale*, and *E. P. Dwyer*.

The minutes of the previous meeting were read and confirmed.

The *Secretary* proposed, and *Mr. Murdoch* seconded, the election of *Mr. Stephen Beeson, M.R.C.V.S., Harrogate*. Carried unanimously.

It was resolved that *Mr. J. W. Anderton, F.R.C.V.S.*, of *Skipton*, be supported as a candidate for a seat in the Council at the ensuing election.

The *President* read the inaugural address.

GENTLEMEN,—It is with feelings of some trepidation that I venture to assume the dignified position to which you have appointed me, and I can only assure you that it will afford me the utmost pleasure to serve you and to further the interest of the honorable profession to which we belong. Looking back at the history of the profession for the eighteen years I have now had the honour of belonging to it, there are many points of interest to which I might call your attention. It is by no means a difficult matter to trace its progress, its failures, and successes, until landed as we are at the year of grace 1879.

We find ourselves enjoying an established position, a distinct recognition of our status at the hands of the intelligent public, with a growing determination within the profession to consolidate its forces and establish more firmly our rights and privileges. It is quite true there are difficulties standing in the way, prejudices, misrepresentations, and abuses to be confronted, but we need not fear them if we only approach the consideration of all matters brought before us with a determination to bear and forbear, and with a loyal desire to individually and collectively handle anything which injures or interferes with the position of the Society and its members; and if we do this, I am sure the records of the forthcoming year will not be barren of good work. Gentlemen, I crave your earnest assistance and support, and above all your candid, out-spoken spontaneous expressions of opinion in all discussions that may take place; let us get quit of that morbid reluctance to speak from fear of attracting a little interest here and there. If any one has an abuse to complain of, or is aware of anything against the credit or interest of the profession, let him out with it. These are energetic words, but well meant, and if carried out, with your assistance, something tangible must be the result. There are two or three matters now before the profession which are likely to considerably benefit us and are well worthy of consideration. One is the present and amended mode of electing members for the council in London, which has been in operation for some time, under which provincial nominations may be made. This opens out an opportunity for the country practitioners to have their views represented at the central board; it is a valuable change, and I think if we only take care to make a judicious selection of representatives, much good may be done in removing any misapprehensions or disabilities under which we may have had to labour, and in putting an end to that which we have deemed a too centralising influence in the profession. At the last meeting of council there was a discussion on the 37th clause of the bye-laws, which, as you are aware, provides that no student shall be allowed to present himself before either section of the Board of the Royal College of Veterinary Surgeons for his *first*, *second*, and *third* examinations more than three times. I consider this a most objectionable rule, and likely to create a division in the now united profession. I regret that Mr. Peter Taylor's amendment on that clause was rejected, although the smallness of the majority showed that there was a strong feeling in the council in its favour. I consider the Principals in the schools are the best judges upon such a question. I believe also that students are admitted to the schools too young, inasmuch as not a few receive their diplomas while yet in their teens. It would be more

satisfactory to the teachers and advantageous to the students if they were nearer their majority before entering the schools.

Another matter which is likely to engage our attention during the year is that of the "penal clause," a subject which was brought so prominently before you fifteen months ago by a near relation of mine that I need not now refer to it at any length, but which in its ramifications must greatly affect the constitution of the profession. It has received considerable discussion and attention, and I think there can be no two opinions as to its desirability. Now that the chief obstacle is removed, the Highland Agricultural Society having ceased to grant certificates, another year should not be allowed to pass without a strenuous effort being made to obtain it. Funds will of course be required, and I should be glad to contribute my quota, and I have no doubt the various members of the Society will be proud to do the same, so that I trust the question will be speedily taken up. I may here state that the following are the conditions upon which those who hold the Highland Society's certificate may obtain the London diploma without examination:—those who graduated with the Highland Society in 1848 to 1872, one guinea; 1873, two guineas; 1874, three guineas; 1875, four guineas; 1876, five guineas; 1877, six guineas; 1878, seven guineas. These terms are, of course, quite open to all, and I hope every one who does not hold the London diploma will lose no time in applying for it, so that in future we may be one united body.

The next matter which I would notice is one which has lately been going the round of the veterinary periodicals, namely, the examination fees. Private members of our profession in London appear to be placed in a very invidious and unpleasant position, if the statements of Mr. Moore are to be relied on, and I see no reason why they should be doubted. Gentlemen, those statements represent a state of things which I think our profession ought not to tolerate for a moment; leaving the special case referred to for subsequent discussion, I would add—in view of the "Murdock case" lately tried in a local court, which held that a veterinary certificate covered all kinds of vicissitudes and contingencies which might happen to a horse, I think the examination fee should advance *pro rata* with the value of the animal. That is to say, if a horse is worth £50, half-a-guinea for an examination, exclusive of journey and travelling expenses, and half-a-guinea extra for a certificate. If the horse is worth £100, one guinea for examination, with half a guinea for certificate. I may just say in passing that the Murdock case was one of great hardship to our friend, and certainly one in which any member of the profession might have got involved under similar circumstances.

There is one other subject I would like to say a few words on, and that is, the Dick testimonial fund. I think every member of the profession ought to be proud of the late Professor Dick, and to approve of any mode of perpetuating his fair fame. It may not be generally known what he accomplished for the profession. In considering anything that he did, we must look at his humble origin and the state of the profession when he came to its rescue; when we do so, and realise the opportunities that by his exertions were given to non-prominent members of the profession, the unfailing and indomitable perseverance he displayed in grappling with the almost insurmountable difficulties he had to encounter through the imperfect knowledge then existing of the veterinary art, and the obstructions he met with, we can only stand amazed at the work he did in founding his college and carrying it on to success. Where do you find a parallel of such devotion to a cause? I refer to this because I feel that the profession has not done itself credit in allowing honour to whom honour is due to remain so long neglected. Many once hard-fisted mechanics are now through his instrumentality living in influence and affluence who would otherwise have been between the bellows and the anvil, a position from which he himself sprung. Gentlemen, I would be extremely glad to bring about a revived interest in this matter, and will adopt any course that may be suggested to that end.

Gentlemen, I have now to thank you for the distinguished honour you have conferred, upon me and, as I have already said, it will be my endeavour to fill the position satisfactorily, a task which I do not think will be very difficult with the support which, I am sure, you will all be ever ready to give me. Previous to coming to Yorkshire, I was a member of the mother society in Glasgow, and even since coming to Bradford I have been associated with you. I have always made an effort to attend your meetings when not prevented by professional engagements, and I am glad to be able to say that I have derived profit from the various discussions upon the subjects that have been brought before us for consideration. I look back upon my connection with you with great satisfaction, and it only remains for me now to wish you a very happy new year; may it be a very prosperous one and the grim messenger come to no hearth connected with us.

The address was followed by a discussion upon some of the subjects dwelt upon.

Mr. Greaves was of opinion that a student had a perfect right to further examination after three times rejection, as long as he was able to pay the fees, &c. There had been a considerable

number of students rejected at the examinations instituted lately; did these large amount of rejections arise from the negligence or apathy of the students, or was it in consequence of deficient instruction at the schools? He thought it was the duty of the schools to obtain as many patients as possible, in order that the students may obtain practical knowledge. It would be necessary to obtain a new charter in order to carry out the arrangements with the Highland Society; this would afford an excellent opportunity for obtaining a penal clause.

Professor Axe said that the questions of rejected students had been the subject of much comment lately. The fact was, the number of rejections very little exceeded the average. The rejected candidates had invariably amounted to about one third of the number examined. As to the causes of the rejections, his opinion was that the principal one was the non-application to their studies and the general apathy and neglect shown by the large majority of the unsuccessful students. He was of opinion that the quantity and quality of the education given at the schools was very large and comprehensive, and therefore any young man who devoted the necessary time and attention to his studies ought to be able to pass the required examination. He thought it was one of the duties belonging to veterinary societies to know that the instruction given to students at the schools was of a satisfactory character. With regard to the controversy respecting the apparently low charges for Subscribers to the Royal Veterinary College, he begged to remind the members that this was done expressly to obtain practical information for the students, and surely the graduates of the school would not now desire to curtail the advantages in this respect, which they had formerly enjoyed. He was of opinion that the present opportunity was very favourable to endeavour to obtain a penal clause, and he trusted that the various veterinary medical societies would bring pressure to bear upon their parliamentary representatives to obtain their support in favour of the new charter.

Messrs. Cuthbert, Freeman, Anderton, &c., also addressed the meeting upon various subjects alluded to in the address.

A unanimous vote of thanks to the President concluded the business of the meeting.

At the dinner the usual loyal and patriotic toasts, with the usual veterinary ones, were proposed and responded to, and an enjoyable and instructive reunion was passed.

Professor Axe kindly consented to introduce a paper for discussion at the April meeting, entitled "Aids to Diagnosis."

MONTREAL VETERINARY MEDICAL ASSOCIATION.

THIS Association held its regular semi-monthly meeting on Tuesday, December 18th, in the lecture hall of the College, Union Avenue, at 7.30 p.m. Professor Mc Eachran in the chair. After the usual business routine, Mr. P. H. Cummings, of Quebec, was called upon to read his communication on a case of *navicular disease* treated successfully by him during the past summer. The anatomy of the parts involved, the numerous theories advanced as the cause of the disease, and the modes of treatment were explicitly and fully explained. The *frog seton* (the treatment used in the case) was strongly advocated by the Speaker, and its mode of introduction plainly demonstrated. The reading led to considerable debate and critical interrogation which gave Mr. Cummings the opportunity of enlarging still more on the subject.

Next in order was a paper by Dr. James Bell, of the Montreal General Hospital, and lecturer on *Materia Medica* in the Veterinary College, on Dr. Lister's *Antiseptic Treatment*. The paper was prepared in the most thorough and scientific manner. The system was minutely explained as given by the inventor, which was followed by a number of valuable remarks as to its use in certain cases, such as complicated fractures, amputations, large wounds, &c., based upon personal experience.

Some estimate of the pain and suffering prevented by this treatment can be arrived at when it is generally admitted that operations which, under ordinary treatment, would take weeks or even months to heal, would, under Dr. Lister's *Antiseptic Application*, be thoroughly healed in from one to two weeks—not unfrequently large and dangerous wounds are restored to perfect soundness in ten days or even less. Another noteworthy consideration in favour of this treatment is the almost complete absence of troublesome and dangerous after results such as septicæmia, erysipelas, &c., diseases which are not an uncommon sequence under the ordinary method.

Dr. Bell closed by referring to its applicability in veterinary practice, which was supplemented by some useful and practical suggestions from the chairman, who was of the opinion that this new and humane invention would, if in the hands of the scientific veterinarian, be of incalculable benefit to the profession.

A prolonged discussion ensued, which was entered into by most of the members present, at the termination of which the lecturer exhibited the apparatus used by Dr. Lister, and also the prepared gauze dressing, &c., made by him for the purpose. At the next meeting, to be held on the second Thursday in January, Mr. Lemay will read a paper on "Stable Management."—*Star, Montreal*,

ONTARIO VETERINARY MEDICAL ASSOCIATION.

THE annual meeting of the Ontario Veterinary Medical Association was held in the museum of the College December 20th. The profession was well represented from all parts of the Province. The most important business before the Association was the question of incorporation. After a discussion, in which most of the members took part, it was resolved to proceed at once with the steps necessary for procuring the Act of incorporation.

The officers for the ensuing year are :—President, Professor Smith ; 1st Vice-president, J. H. Wilson ; 2nd Vice-president, J. T. Duncan ; Secretary, C. H. Sweetapple ; Treasurer, W. Cowan ; Directors, C. Elliott, J. Bond, D. Hamilton, J. S. Ceasar, E. A. A. Grange, A. O. F. Coleman, J. O’Niell, and M. Standish.

Prof. Smith and Messrs. Bond, Ceasar, Cowan, Duncan, Sweetapple, and Wilson were appointed a committee to attend to the Act of incorporation.

The President, in the course of an interesting address, gave a description of his visit to Europe, and an account of the veterinary colleges of Britain and the Continent. He was courteously received by the professors and leading veterinarians of the Old World. After a vote of thanks for the address, the meeting adjourned.—*Toronto Globe*.

SMITHFIELD CLUB.

At a meeting of the Council, held at the Agricultural Hall, Tuesday, February 4th, 1879—Present: Col. Kingscote, C.B., M.P., President, in the chair.

The minutes of the last Council meeting were read and confirmed.

The Veterinary Inspector’s report on the health of the animals at the last show was read.

The following reports of the stewards of live stock were read, received, and adopted, viz. :—

“A protest was lodged against pen No. 261, on the grounds that one of the ewes was under three years old. Having carefully considered the matter, and heard the evidence of both parties, they decided that the protest was not sustained, and therefore the prize as awarded shall be paid to the exhibitor.”

“A protest was entered against pen No. 363, in Class 70, on account of the age of the pigs not corresponding with the entry. The exhibitor admitted to the stewards that the pigs were wrongly placed through the negligence of his servant; and they were accordingly disqualified. Pen No. 385, in Class 75, was

protested against as being of the same litter as 349, Class 66, and therefore not qualified to compete in a class for other breeds. The bailiff of the exhibitor admitted that they were all of the same litter. They were, therefore, disqualified; and the stewards recommended that no certificate signed by James Robertson, the bailiff to Lord Radnor, be received for any of the Club's shows for the future, he having certified that the same litter of pigs were of different breeds. The stewards, therefore, recommend that the cup be given to reserve No. 382. They have also to report that the pen of pigs, No. 376, in Class 72, having been certified by Professor Brown to be of different ages, the breeder has been called up to prove the correctness of his certificate."

"They recommend that the following addition be made to rule No. 16 in the prize sheet:—'If the exhibitor or breeder should fail to do this by the 30th day of January next, after the show the stewards shall report the facts of the case to the next Council meeting, and the Council shall determine whether the exhibitor or breeder, or both, shall be allowed to exhibit in future at the Club's show.'"

"Also, that the following addition be made to rule No. 42 (in regard to protests):—'That any person or persons lodging a protest shall deposit the sum of £5 with the secretary of the Club, and if on investigation the protest is not sustained to the satisfaction of the stewards, the sum thus deposited shall, at the discretion of the Council, be forfeited to the funds of the Club.'"

"With reference to the pen of pigs, No. 376, belonging to Mr. Edward Tombs, of Shilton, and bred by Mr. William Tombs, of Langford, and respecting which the Veterinary Professor reported that the dentition indicated that the three pigs were not all of the same litter, the stewards beg to report that, the exhibitor and breeder having been called upon to prove the correctness of their certificates, after personal conference between the stewards and exhibitor, and correspondence with the breeder, the latter wrote the following letter:—

"Langford, Dec. 24th, 1878.

"SIR,—I must admit that my pigs have been all let run together in yards, having no proper styres, and it may be that the three pigs are not all of the same litter. Having no idea of showing them myself, did not take the precaution to keep them separate, which I now deeply regret.—Yours truly.

"(Signed) W. TOMBS."

"Under these circumstances the Stewards disqualified the pigs, in accordance with the rules of the Club."

"The Stewards consider it highly reprehensible for a breeder to sign his name to a certificate of the correctness of which he is unable even to satisfy himself. The Stewards hope that the addition which they recommend to be made to Rule 16 will enable the Council in future to deal with cases of this description as each may appear to deserve."

It was resolved—That the special rules hitherto in force, pre-

venting animals exhibited at other shows within a month previous to the Smithfield Club's Show, shall not be in operation any longer; but that the following be continued as heretofore:—

“3. That the exhibitor shall send with each animal a certificate that it has not been, for fourteen days previous to its leaving home for the Smithfield Club's Show, in contact with any animal suffering from contagious or infectious disease. No animal will be admitted without this certificate.”

“4. That all animals undergo a veterinary examination previous to being admitted at the doors of the Agricultural Hall; and that suitable covering be constructed over the outer yard to enable this to be properly carried out.”

Veterinary Jurisprudence.

ALLEGED NEGLIGENCE IN A VETERINARY OPERATION.

SUFFOLK ASSIZES—IPSWICH, *Feb. 14th.*—(BEFORE LORD
JUSTICE COTTON.)

SMITH *v.* MARKING.

THIS was a special jury case, the claim being for the value of a stallion colt, alleged to have been destroyed through the negligence of the defendant.—Serjeant Ballantine and Mr. Jones appeared for the plaintiff; Mr. Bulwer, Q.C., and Mr. Digby appeared for the defendant.

Mr. Jones opened the pleadings, from which it appeared that the plaintiff, Benjamin Smith, lives at Great Pagley, near Stambourne, Essex, and the defendant, Charles Marking, carries on the business of a veterinary surgeon at Toppesfield. The action was to recover a sum of money for negligence in performing the operation of castration upon a colt. The statement of defence denied that there was any unskilfulness in his treatment, or any neglect, and alleging that the injury was caused by the plaintiff.

Serjeant Ballantine, in opening the case, said that it involved details of a technical and exceedingly disagreeable nature. It was necessary to perform certain operations on horses for the purpose of making them more useful to mankind, but if they were to be performed, it should be done with all mercy and feeling towards the animal which was to be subjected to such a fearful and cruel ordeal. The charge against the defendant was that so far from considering these feelings, and applying the skill which ought to be applied in such a case, he exhibited the grossest want of skill, and the most flagrant negligence and cruelty, which, if it was described to the jury as it was to him, it would pretty well make one's blood run cold. If the jury were agreed as to the facts of the case, all they would have to do was to consider the

value of the colt which was destroyed through the defendant's maltreatment. The operation was performed on Tuesday, and the animal died on the following Sunday.

The learned counsel, however, agreed on the value of the horse at £45.

The evidence was chiefly of a technical nature. The plaintiff said he had two colts upon which the defendant had to operate. In the course of the operation hot irons were necessary, and the plaintiff stated that the iron used for the first horse became loose in the handle through overheating. To tighten it the defendant struck it against the animal's thigh. In the case of the second colt, which was the subject of the action, it ran away whilst the defendant was operating on the first. When caught it was very hot, but notwithstanding that he proceeded with his task although the plaintiff told him it was unfit for it. After the operation bleeding set in, which defendant attempted to stop by applying tow and puff-ball. Defendant ordered that it should be bathed, and plaintiff kept men at work bathing it day and night till it died.

Cross-examined by Mr. Bulwer: The first colt was operated upon successfully. The same appliances and process was adopted for that as for the one which died.

Mr. James Polton, veterinary surgeon, Messing, said the mode of procedure adopted by the defendant was one of the recognised plans. He, however, stated that the operation should not be performed whilst the horse was heated. Defendant was also to blame in leaving whilst the animal was bleeding, which ought to have been arrested by cauterising with a hot iron. The witness condemned the course pursued by the defendant to stop the hæmorrhage. Puncturing the swollen parts, particularly the under portion of the abdomen subsequently with a needle, was so highly objectionable that he thought no one outside a lunatic asylum would have recourse to such a thing.

The witness underwent a severe cross-examination, which very materially lessened the value of his evidence.

Mr. Peter Stalker Cowan, veterinary surgeon, Colchester, criticised the propriety of operating whilst an animal was heated from muscular exertion, and gave evidence as to the proper mode of procedure.

Mr. Bulwer, in addressing the jury for the defence, said he had felt great anxiety, not for the sake of the paltry £45, but for the sake of the character and livelihood of his client. The defendant stood charged, not merely with gross want of skill and gross neglect, but with downright cruelty to a dumb animal. But that accusation was not the suggestion of Serjeant Ballantine, or even the solicitor who instructed him, but of the plaintiff himself; and the same spirit that prompted him to make those accusations and imputations against as honorable a man as himself had characterised his evidence. Mr. Bulwer then addressed himself to the facts, and contended that what was done

on this occasion was what was done on every other occasion, and what was proper and right. As to the alleged neglect, the defendant attended and saw the colt every day, and did all he could for it; and the death of the animal was caused by the plaintiff's improper treatment of it after the operation in opposition to the directions of the defendant. He (Mr. Bulwer) would now call the "lunatics"—(laughter)—gentlemen of experience, and after they had heard their evidence, he hoped the jury would say this was an unworthy attempt to ruin the defendant's character.

The Defendant was called, and described his course of procedure. He denied the allegation that he knocked the iron on the horse to tighten the handle: he tapped it on a pail. From beginning to end he treated the colt in a scientific way, and according to the practice of the best authorities.

In cross-examination he admitted that he had lost two colts after a similar operation from cold. He had also lost a few pigs and a bull.

Mr. Thomas Avis, hospital surgeon at the Royal Veterinary College, London, said the defendant's mode of procedure was correct. He attributed no ill-consequence to the fact that the horse was heated, and said that the puncturing of the swelling was quite right.

At 6.20 the case was adjourned till 10.30 o'clock (Saturday) morning.

This morning *Frederick Golding*, who has been in defendant's service for two years, was called, and corroborated his master's statement as to what was done on the afternoon the operation was performed.

Mr. Wallis, veterinary surgeon, Halstead, said the defendant's mode of operation and subsequent treatment were right.

Mr. A. J. Shorten, veterinary surgeon, Ipswich, gave evidence to the same effect. He thought defendant adopted the only course he could to arrest the hæmorrhage which supervened.

Mr. Wright, veterinary surgeon, Ipswich, and *Professor Pritchard*, of the Royal Veterinary College, were also called, and gave evidence supporting the treatment adopted by the defendant.

Mr. Bulwer and *Serjeant Ballantine* having replied,

His Lordship summed up, leaving to the jury the question whether the death of the colt was caused by the negligence of the defendant, and, further, whether the treatment of the defendant led to its death.

The jury, after a few minutes' consultation, returned a verdict for the defendant.

Judgment was given for the defendant with costs.

Mr. Jones asked that execution might be stayed for a week.

His Lordship saw no reason to comply with the application.

ORDER IN COUNCIL—DAIRIES, COWSHEDS, AND MILKSHOPS.

THE following Order by Her Majesty in Council has just been published. The Order is to take effect immediately, and extends to Great Britain only. The first four clauses are comparatively unimportant.

Registration of Cowkeepers and Others.

Clause 5.—(1.) Every local authority shall, with all practicable speed after the making of this order, open, and shall thenceforth keep, a register for the registration with them under this order of all persons from time to time carrying on in their district the trade of cowkeepers, dairymen, or purveyors of milk, and shall, from time to time, revise and correct the register. (2.) The local authority shall give public notice, by advertisement in a newspaper circulating in their district, and, if they think fit, by placards, handbills, or otherwise, of the time at which the register will be opened, and of the mode of registration. (3.) After the expiration of the time prescribed in this behalf in the advertisement, not being more than two months, and not being less than fourteen days, from the publication of the advertisement, it shall not be lawful for any person to carry on in the district of the local authority the trade of a cowkeeper, dairyman, or purveyor of milk, unless he is registered as such under this order.

Dairies and Cow Sheds.

6.—It shall not be lawful for any person following the trade of cowkeeper or dairyman to begin to occupy as a dairy or cowshed any building not so occupied at the making of this order, unless and until he first makes provision, to the reasonable satisfaction of the local authority, for the lighting, ventilation, cleansing, drainage, and water supply of the same, while occupied as a dairy or cowshed.

7.—It shall not be lawful for any person following the trade of cowkeeper or dairyman to occupy as a dairy or cowshed any building, whether so occupied at the making of this order or not, if and as long as the lighting, ventilation, cleansing, drainage, and water-supply thereof are not such as are necessary or proper—
(a) for the health and good condition of the cattle therein; and
(b) for the cleanliness of milk vessels used therein for containing milk for sale; and (c) for the protection of the milk therein against infection and contamination.

Cleansing.

8.—A local authority may, from time to time, make regulations for prescribing and regulating the cleansing of dairies and cow-

sheds in the occupation of persons following the trade of cow-keepers or dairymen, and the cleansing of milk stores, milk shops, and milk vessels used for containing milk for sale by such persons.

Contamination of Milk.

9.—If at any time disease exists among the cattle in a dairy or cow-shed, or other building or place, the milk of a diseased cow therein (*a*) shall not be mixed with other milk; and (*b*) shall not be sold or used for human food; and (*c*) shall not be sold or used for food of swine or other animals, unless and until it has been boiled.

10.—It shall not be lawful for any person following the trade of cowkeeper, or dairyman, or purveyor of milk, or being the occupier of a milk store or milk shop, to allow any person suffering from a dangerous infectious disorder, or having recently been in contact with a person so suffering, to milk cows, or to handle vessels used for containing milk for sale, or in any way to take part or assist in the conduct of the trade or business of the cowkeeper, dairyman, purveyor of milk, or occupier of the milk store, or milk shop, as far as regards the production, distribution, or storage of milk, until all danger therefrom of the communication of infection to the milk, or of its contamination, has ceased.

11.—It shall not be lawful for a person following the trade of cowkeeper, or dairyman, or purveyor of milk, or being the occupier of a milk store or milk shop, to use a milk store or milk shop in his occupation, or permit the same to be used, for any purpose incompatible with the proper preservation of the cleanliness of the milk store or milk shop, and of the milk vessels and milk therein, or in any manner likely to cause contamination of the milk therein.

C. L. PEEL.

PARLIAMENTARY INTELLIGENCE.

AMERICAN CATTLE DISEASE.

HOUSE OF COMMONS, *Feb.* 14th.

Mr. Rathbone asked the Vice-President of the Council upon what grounds the Government had ordered the slaughter at the port of landing of cattle arriving in the country from the United States of America; whether any cases of pleuro-pneumonia had occurred among any cattle arriving from the United States except those brought over by the Ontario; how many cargoes of cattle from the United States had arrived since that of the Ontario; whether there had been any correspondence with the Government of the United States or its representatives, or with our representatives in that country on the subject, and whether

there were any minutes relating thereto; and, if so, whether he would lay copies thereof upon the table of the House; and whether the Government had any, and, if so, what proof that the animals in the Ontario's cargo which were affected were American and not Canadian cattle.

Mr. Chaplin asked the noble lord whether Her Majesty's Government had received any information as to the outbreak of disease among cattle in the United States of America; how far and to what extent it was true as reported that contagious pleuro-pneumonia was prevalent at the present time in that country; whether Her Majesty's Government were satisfied that the general sanitary condition of cattle therein was such as to afford reasonable security against the importation of diseased animals therefrom into this country; and, if not, whether he would explain why the Order in Council exempting American cattle from the operation of the provisions of the fifth schedule of the Contagious Diseases (Animals) Act relating to foreign animals—viz. "They are not to be moved alive out of the wharf,"—was not suspended immediately, instead of remaining in force till the 3rd of March.

Mr. Mundella also asked whether the noble lord would state the number of live cattle, sheep, and pigs imported from Canada and the United States respectively in the first and second half years of 1878, with the number found suffering from contagious disease; whether he would also state the circumstances under which the recent Order in Council was issued requiring the slaughter of all American cattle at the port of debarkation, and whether there was any probability of such Order being speedily withdrawn; and whether he would lay all the correspondence relating thereto upon the table of the House.

Lord G. Hamilton—The facts upon which the Order in Council was made are very simple. For some time past the Privy Council have from different quarters received intimations that there was in the United States a considerable amount of disease among cattle and other domestic animals. I have in my hand a report, or rather a message, from the President of the United States communicating to the Senate in February, 1878, information in relation to the diseases prevailing among domestic animals. In the Appendix, page 144, of this Report, are the opinions of the different men of authority and experience upon the subject. I will read a few lines from Professor James Law, one of the most eminent of those consulted. He says, page 144:—

"Lung Fever.—This is the most insidious of all plagues, and this malady we harbour on our eastern sea-board, where it is gradually, but almost imperceptibly, invading new territory. . . . There is abundant evidence of the existence of this affection in Eastern New York, New Jersey, Pennsylvania, Maryland, Delaware, Virginia, and the district of Columbia. (See 'Government Report on Diseases of Cattle,' 1871, and many instances in current agricultural journals.) Within the last year I have been advised in

the case of three outbreaks, one in Eastern New York, one on Staten Island, and one in New Jersey. At present it excites little apprehension, but we are asleep over a smouldering volcano. Spreading from the port of New York it has already gained a substantial hold upon different states, including the district of Columbia, and has invaded and been repeatedly expelled from two more, and it is only necessary that it should reach the sources of our stock supplies in the West to infest our railway cars and Eastern States generally. . . . England has lost over 10,000,000 dols. from rinderpest in the present century, but she has lost hundreds of millions from the less dreaded lung fever."

He concludes by imploring the Government to eradicate this plague at once. The Lord President did not feel justified in excluding, upon the information before him, the import of live cattle except for slaughter from the United States until he had conclusive proof of what the nature of this lung disease was, and that there was a real danger of pleuro-pneumonia being brought into this country from the States, there being no single case of that disease being brought from the United States up to the 26th of January, 1879. During the last three weeks pleuro-pneumonia of a contagious character has been detected in three cargoes of live cattle, brought over in the steamships *Dominion* and *Ontario*, from Portland, and the *Istrian*, from Boston. An order was, therefore, issued, prohibiting import of live cattle from the United States after the 3rd of March, but not from Canada, which is not only quite free from disease, but has recently issued an order prohibiting the import of live cattle from the United States. Twelve cargoes have arrived since that of the *Ontario*, all healthy, except in the case of the *Istrian*. The date of the 3rd of March was fixed, as it was considered only fair to allow cargoes shipped at the time of the order to be landed, if healthy. If any disease exists among them, all will be slaughtered. It is hoped that by the 3rd of March a foreign animals wharf will be opened at Birkenhead with every accommodation for the slaughter of animals coming from the United States. On the Liverpool side ample accommodation will be provided by the same date for the lairage, and, if necessary, the slaughter of animals from unscheduled countries, and the present inconvenient landing place be abandoned. I will lay the correspondence asked for, together with the report I have alluded to, upon the table of the House.

Mr. W. E. Forster asked whether the information referred to was known to the Government in time to be utilised in the preparation of the measure of last year.

Lord G. Hamilton replied that it was in the possession of the Lord President in November last.

PRESENTATION OF A TESTIMONIAL TO PROFESSOR WILLIAM PRITCHARD, M.R.C.V.S.

THIS event took place in the Theatre of the Royal Veterinary College on Wednesday, the 5th ult. The testimonial consisted of a massive silver cup, with an address bearing the names of subscribers. The amount contributed by the students was upwards of £40.

The presentation was made by Mr. Edgar (one of the senior students), who spoke as follows :

PROFESSOR PRITCHARD—

SIR,—We have requested the favour of your presence in this theatre for a short time this morning that we may offer to you our congratulations upon the recent event of your marriage, and at the same time embrace the opportunity of expressing our sense of esteem and gratitude for the courteous and zealous consideration ever entertained by you for our academical advancement and professional efficiency.

We are fully sensible of our advantage in possessing a teacher true to his science, true to his honorable position, and at the same time anxious to impress the “student mind” with a feeling of friendship and personal regard.

Will you, Sir, honour us by accepting the piece of plate and address now placed before you, in remembrance of the students, of their united good feeling and earnest solicitation for your social happiness and long successful professional career?

The presentation having been made,

Professor Pritchard said—Gentlemen, allow me to address you on this occasion as my friends.

I have set myself many tasks, and have accomplished many ; but I am doubtful whether I ever had a more difficult one to deal with than that which you have so kindly imposed upon me now, viz. of thanking you in an efficient and proper manner for the very handsome testimonial you have to-day presented to me. I will, however, do my best—no man can do more—to give expression to my appreciation of your good feeling, and of my thankfulness for your very kind recognition of my humble endeavours to do my duty towards you as a teacher, and at the same time approach you as a friend.

My friends, your representative, Mr. Edgar, has most kindly alluded to my efforts to enact a part which, in our relative positions, is sometimes difficult, viz. that of being both a teacher and friend. I am afraid I have not so completely and so frequently succeeded in this as he would have you believe ; but if I have not, I am egotistical enough to think that the fault is in part your own. For your good, I am obliged at times to be stern, even cross ; but believe me, when circumstances have necessitated this course, I am as sorry and as vexed as the pupil whom my duty compels me to reprimand. A loving parent chasteneth the child with an

affectionate and good intent; it is a painful but a necessary course, and I am sure that with you it is necessary for it to be understood that "Pritchard means what he says" to prevent hilarity and other extravagant conduct which would otherwise probably lead on to unpleasantness and trouble. At the same time, I am very pleased to say that little need of this kind of check has been felt by me, for in most instances a look has sufficed.

I have often desired to have a chance of apologising for the abrupt manner in which I took leave of the class at the close of the last winter session. I will avail myself of doing so on this occasion. As you are all now aware, my last lecture was delivered on the morning of my wedding day, and I thought that if the fact of what was about to take place had been made known to you that the whole of the members of the class would have attended at the church, and consequently neglected their studies.

Mr. Edgar has nicely given expression to very kind wishes for the future of my wife and myself, and I cannot but feel assured that he is simply giving utterance to the feelings of every one of you (great applause). How can I thank you? "I am ever poor in thanks, but I thank you." I can convey no more; but I am sure you will be pleased to hear that the union, which you by this munificent gift so kindly recognise, promises to be an exceedingly happy one, for I think I have secured a partner thoroughly calculated to make a man happy. If her present happiness can be added to, it will be when I inform her of what has occurred to-day.

My friends, when in time to come I look upon this handsome cup and illuminated testimonial, I shall not only be reminded of your good feelings towards me, but shall be stimulated to renewed exertions, though my energies may be flagging. I cannot say more, but I would have you assured that the goodwill towards me, of which you have given such evidence to-day, will not be forgotten so long as I have the ability and the health to wield that ability for your benefit here or hereafter.

OBITUARY.

THE following deaths have been reported to the Registrar of the Royal College of Veterinary Surgeons:

Mr. Thomas Greaves, jun., M.R.C.V.S., Burnley, Lancashire, in the 37th year of his age. His diploma bears date April 16th, 1869.

Mr. William Metcalf Boag, M.R.C.V.S., aged 64, of Morpeth, Northumberland. His diploma bears date April 20th, 1842.

Mr. James Moore, jun., M.R.C.V.S., London, on Feb. 4th, in the 36th year of his age. Diploma dated May 1st, 1863.

Mr. Alfred Challinor, M.R.C.V.S., Bolton, Lancashire. His diploma bears date Dec. 20th, 1866.

Mr. Robert Page, M.R.C.V.S., Bishop's Morchard, Devon. Diploma dated Feb. 4th, 1836.

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Communications and Cases.

REMARKS ON *EUSTRONGYLUS GIGAS*. By
T. SPENCER COBBOLD, M.D., F.R.S., Professor of Hel-
minthology, Royal Veterinary College.

THE object of the present brief communication is to draw attention to the peculiarities of habit shown by this remarkable entozoon, and at the same time to give prominence to M. Mégnin's recent announcement of its occurrence in the abdominal cavity of a dog. As is generally known, the Museum of the Royal Veterinary College contains three choice examples of the worm, two males and one female. They occupied the kidney of a dog, entirely destroying the glandular substance of the organ. The Hunterian Museum contains a fine specimen which was undoubtedly removed from the human body, besides several others from various animals. It also includes a series of dissections which I executed and mounted for the collection in 1865.

Hitherto the precise course of development and mode of origination of this parasite has baffled the best efforts of investigators. As stated by me in a recent communication to the Birmingham Natural History and Microscopical Society, the embryos of *Eustrongylus* are vermiform, measuring about the one hundredth of an inch in length. From the anatomical observations of Schneider and Leuckart, it would seem that the immature worms dwell chiefly in fresh-water fishes. Thus, the so-called *Filaria cystica* must be regarded as an immature *Eustrongylus gigas*. Hitherto,

this little worm has been found occupying cysts or capsules, situated immediately beneath the peritoneal membrane in *Galaxias scriba*, and in certain oceanic fishes belonging to the genus *Synbranchus*. According to the eminent piscicologist, Müller, the *Galaxiidae* present strong affinities to the *Salmonidae*, but Cuvier considered them as essentially modified pikes (*Esocidae*). It is well known that Balbiani attempted to rear *Eustrongyli* by direct experiment. He administered the ova to dogs, but obtained only negative results. Similarly, his experiments on reptiles and fishes failed.

If the conclusions of Schneider and Leuckart be correct—and these make it appear that we must hold certain freshwater fishes as responsible media of infection—one can only express surprise that man is so seldom victimised by this parasite. The *Synbranchi*, being tropical fishes, can have little part in the infection of animals, apart from seals. One must suppose that pumas, dogs, wolves, gluttons, raccoons, minks, weasels, and other carnivora, contract this worm by attacking, capturing, and devouring fishes at times when they are prevented from obtaining other and more readily accessible kinds of food. How this parasite should in some instances gain access to herbivorous animals is not so clear.

The fullest accounts of this worm at present published are those given in the standard works of Leuckart and Davaine; and in this connection it is not a little curious to notice the strange way in which the old writers confounded nematode Entozoa with serpents. One of the most remarkable memoirs quoted by Davaine is that of Clamorgan. In this old writer's work, *La Chasse de Loup*, dated 1583, the kidney-worms, or *Eustrongyli* of modern writers, are characterised as "serpents and highly venomous beasts." What Dr. Küchenmeister and others have advanced in respect of the ancient records concerning the serpent character of the guinea-worm finds noteworthy confirmation in the circumstance that the great strongyloid kidney-worm has also been looked upon as a species of venomous ophidian reptile. Facts of this order, if duly weighed, inevitably cause us to modify our interpretation of the statements made in ancient records. Thus, whatever good the remedies recommended and enforced by the Jewish lawgiver may have accomplished for the human victims suffering from the attacks of "fiery serpents," *Dracunculi*, or guinea-worms, it is to be feared that no similar remedial measures of the mystical kind could be rendered available in the case of animals bitten by parasites that have been regarded as renal serpents. It is fortu-

nate, indeed, for man that the great kidney-worm (*Eustrongylus gigas*) has only once been detected in the human body. If this formidable entozoon, capable of attaining a length of three feet, were as common in man as it is in certain animals, no doubt the superstitious people of southern climes would readily invoke clerical aid in view of obtaining miraculous cures. Possibly a mitigation of their sufferings might follow such exhibitions of human sympathy and trust. The case of animals, however, is very different. The unfortunate wolves of the Pyrenees cannot, of course, be expected to secure any very large amount of sympathy; nevertheless, it is the business and duty of the helminthologist to point to the causes of the sufferings of all kinds of animals, whether wild or domesticated, and so far as lies in his power to suggest the means whereby their sufferings may be mitigated. Not only do solitary and large nematoid parasites take up their abode in essentially vital organs of the body, and thus secure the slow destruction of the host, but the minutest forms of the same group of entozoa frequently occur in sufficiently prodigious numbers to sweep off their victims by hundreds or even by thousands. Animal epizoötics due to this source have hitherto been little studied.

The occurrence of the great renal worm in the dog is of sufficient rarity to demand particular notice, especially in cases where the parasite is found in some other organ than the kidney itself. Through the courtesy of an eminent entomologist (Mr. Robert McLachlan, F.R.S.), I have been put in possession of the last issued *Bulletin de la Société Entomologique de France* (No. 3, 1879), and in it I find that the President of the Society, Mons. J.-Pierre Mégnin, who is also veterinary surgeon of the first class to the 12th Artillery Regiment, stationed at Vincennes, read a paper to the Society, on the 12th of February, which is reported as follows :

“ M. Mégnin exhibited a nematode parasite received from the histological laboratory of Professor Robin, and taken from a dog that had served for experiments on lymph, and which had not presented any symptom of disease during life. The parasite was none other than a male *Strongylus gigas*, measuring 25 centimètres in length by a diameter of 5 millimètres, and having a blood-red colour in every part. It was found free in the peritoneal cavity, the serous lining membrane of which had been infiltrated and injected at several points of its surface, and particularly on the folds of the epiploon. The kidneys, on section, were perfectly normal,

a very remarkable circumstance, since it is commonly in the interior of the kidney that one encounters the giant strongyles. They are developed in that organ, and end by causing its complete destruction, and, in consequence, death. The *Strongylus gigas*, though rare, is well known. It is not peculiar to the dog, as one meets with it in other carnivora, and particularly in the wolf and marten. Its presence has also been noticed, though more rarely, in the horse, the pig, and in man himself.

“The old huntsmen who had discovered the worms in the kidneys of the wolf took them for serpents, and this is the origin of the fable of living serpents being found in the belly of carnivores. In the dog it has been seen to arrive at the surface, beneath the skin near the scrotum, and to form tumours, which it is only necessary to open in order to extract them. (M. Leblanc thrice encountered the worm under similar circumstances.) It is probable that in this case the worm had quitted the pelvis of the kidney, had traversed the ureter and urethra, and, arrested by the restriction of the canal produced by the os penis, it had penetrated the subcutaneous cellular tissue.

“The male *Strongylus gigas* may attain a length of 40 centimètres, and the female 1 mètre. It is one of the most dangerous parasites in existence.”

By reference to the original it will be seen that the ‘report’ of M. Mégnin’s paper is very much condensed. I have purposely rendered the translation as literal as possible, consistent, at least, with a correct interpretation of the author’s statements. Brief as M. Mégnin’s paper is, however, the present communication has already extended too far to allow of further comment on the interesting facts which he has brought forward.

REMARKS ON THE *FILARIA MEDINENSIS*, OR
GUINEA-WORM; ON THE OCCURRENCE OF
THIS PARASITE ENDEMICALLY IN THE PRO-
VINCE OF BAHIA; ON ITS ENTRANCE INTO
THE HUMAN BODY BY DRINKING WATER.

By J. F. DA SILVA LIMA, M.D., Officiating Physician at the
Hospital da Caridade, Bahia. Translated from the
Portuguese by Dr. J. L. PATERSON, of Bahia, and com-
municated to Professor COBBOLD.

(Continued from page 156).

PART III.

THIS document bears date the 1st of August, 1869. The
convoy which, in April, 1849, left Bahia for Joazeiro,
consisted of the following individuals:—Antonio F. d'Oliveira
Sampaio, and his brother Manoel F. d'Oliveira, owners of
the merchandise. Manoel Jorge Lima, Pedro Lodres Noid,
Joao Curimata, Manoel da Brauca, Verssimo Barboza
d'Oliveira, the African Francisco, and the Brazilian black,
&c., servants and mule drivers.

Of these various persons five were interrogated, the rest
were dead or absent. By their evidence it will be seen that
they were not the only people infected, for they refer to
another convoy that made the same journey at the same
time, halting at the same place, and affirm that several
persons, three at least of this other convoy, suffered at the
same time and in a similar manner, more or less, as they
themselves did.

1. The first witness is Manoel Jorge da Lima. His evi-
dence was to the effect that, in 1849, he came to the capital
of the province, by way of Jacuipe, in company of his
masters, the brothers Oliveira, one now dead and the other
resident in Europe, and of the other six above-named indi-
viduals; that, on the same occasion, there came also Suciano
Seite da Silva, with several persons, whose names he knows
not, but only that three of that convoy, including Luciano
himself, since dead, had afterwards the guinea-worm; that,
of his own convoy, he himself and five others, including his
two masters, suffered from it, some so severely as to have
convulsions. He stated further that at that time there was a
talk of the guinea-worm and of its presence in various
marshes, but that neither he nor his companions, being fore-

warned, made use of the water from these marshes, either for washing, bathing, or drinking; that, on their return, they came by the customary route, which passes through the Feira de Santa Anna, S. José, Coité, &c.; that there was then a tradition of the guinea-worm's being found in the marsh both of S. José and Pojuca, the former of which they passed by, halting at the latter; that, having there no other water, they used that of the marsh, but only for drinking, having been warned against using it for washing, but for washing only, as it was in that way, and in that alone, it was said, that the guinea-worm found entrance into the human body; but that he is ready to swear that, in his own case and that of his companions, it did not enter the skin in the act of washing, for none of them ever handled or stepped in the water, but only drank it, and this alone they accuse as the cause of their sufferings; that some of his companions began complaining many months after the journey, he himself at the end of a year; that he has no recollection of any other but those two convoys suffering from the disease, these two being the only ones passing through the district in the time of the inundation, after the first rains, and that he is of opinion that the *Dracunculus* makes its appearance only during the first rains after a drought; since that time he is aware of no other case of the parasite occurring in other individuals.

2. Francisco du African said he was by tradition aware that the guinea-worm exists in several of the marshes along the road of Jacuipe, naming those of S. José and Pojuca; he confirms the fact of their having only drunk, and in no other way made use of the water of Pojuca; that this water ran in a small stream from a dam, formerly dry, but then filled and overflowing from the heavy rains; that every one told them not to wash in water holding the guinea-worm, but that he, having already some knowledge of that animal, had told his companions not even to drink of it, as it was a popular delusion that it entered the human body only by the skin in washing, and that if they did drink it they should first boil or strain it, as the animalcule was too small to show any sign of its presence in such half-stagnant water.

3. Verissimo Barboza d'Oliveira suffered from the guinea-worm in 1850, and said he caught the disease in 1849, in a journey by way of Jacuipe, in company of the above-named people; he confirms, in all points, the preceding narratives, that they halted at the pond of Pojuca, four leagues distant from the Feira de Santa Anna; that it was generally suspected that there existed at that place the guinea-worm, as

it certainly did in a rivulet passing through it; that, as they had no other water, they drank of that, and, not giving credit to the assertion of the African slave that the guinea-worm could enter the body by the water they drank, they almost all became affected, as out of nine only three escaped it; that these were João Curimata, Manoel da Branca, and Manoel, a black slave, born in Brazil. He finally stated that, in consequence of what the black had said, he examined the water, but saw nothing, as it was muddy; that he is now perfectly convinced the animal gained entrance to the body through the drinking water.

4. Manoel, a Brazilian-born slave, confirms the statements of the above witnesses as to the locality, and the use they made of the Pojuca waters, adding that, as far as he remembers, three persons belonging to the convoy of Suciano Seite da Silva were affected with the same disease, being Suciano himself and two others—all these since dead—and that these all attributed the disease to the Pojuca waters, in which they were convinced there existed the guinea-worm.

5. João Curimata confirmed the evidence of his four companions, that it was popularly believed that the guinea-worm existed in the S. José and Pojuca marshes, that he did not wash in the water, but drank of it, taking, however, the precaution of straining it, and to this he attributes his having escaped catching the disease.

I have further to add that the evidence of Manoel Francisco d'Oliveira, one of the sufferers, and with whom, on two occasions in Portugal, I conversed on the subject, is in perfect harmony with the account given by his fellow-companions and sufferers.

PART IV.

More, this occurrence of twenty-eight years ago, the authenticity of which cannot be called in question, not of itself sufficient to justify the tradition that, at that time, those localities were infested by the guinea-worm, and that this found an entrance into the system by means of drinking water, other more recent observations would amply confirm both assertions as no longer admitting of any doubt.

In the recent very valuable and learned inaugural thesis of my young colleague and friend, Dr. M. Victorino Pereira, "On the more frequent Parasitic Diseases of Tropical Climates," occurs a letter from an old fellow-pupil of mine, Dr. O. C. Cabossú, now in practice in the Feira de Santa Anna, which, in the main, is entirely at one with the results arrived at, alike in the inquiries made at Joazeiro, and with

those which I myself had been able to draw from the facts therein related. The author of the thesis sums up the letter in the following propositions :

1. Some ten years ago, in the Feira de Santa Anna, and in the parish of S. José, eight miles distant, upwards of fifty persons became infested with the *Filaria medinensis*.

2. The parasite seemed to choose any colour rather than black, regardless alike of nationality and sex.

3. The existence of the parasite in persons using the water only for drinking purposes proves that, in that way, it can find an entrance into the system.

4. Since that time—that is, in the last ten years—cases of the disease are exceedingly rare in the town—somewhat less so in the suburbs.

5. Even now the marsh to the north of S. José is avoided, as still infested with this troublesome tenant.

6. Formerly the dam, having the name of “National,” to the west, and a streamlet running out of it, had the reputation of containing in them the productive cause of so much suffering.

In a note the author of the thesis adds that he has been informed that in that dam, as well as in that of Jacuipe, there are very good leeches.

As from this account there would appear to be two distinct dams, the “National” and that of Jacuipe, we have, therefore, one other locality, not to mention the streamlet running out of the former, infected by the *Dracunculus*, besides those spoken of by the travellers of 1849.

(*To be concluded.*)

SYNOPSIS OF CONTINENTAL VETERINARY JOURNALS.

By JOHN HENRY STEEL, Demonstrator of Anatomy at the Royal Veterinary College.

(*Continued from p. 164.*)

Recueil de Médecine Vétérinaire. 15th January, 1879:—At the fourth sitting, the Congrès National Vétérinaire considered the “Conditions of admission into the Veterinary Schools and the modifications which the course of instruction should undergo.” On the first part of this question there was complete agreement of the members who took part in

the discussion, that the conditions of admission should be more severe than those which are comprised in the present terms, and should consequently bring about more advanced instruction.

M. Delplanque advocated that the programme should in future include all matters of secondary special instruction.

M. Emile Thierry is of opinion that it would be desirable that all candidates be provided with the Diploma of Bachelor of Arts, but this would be a too exacting imposition of an extra expense of 20,000 francs. Failing this, which should be sufficient indication of complete literary education, there ought to be included in the programme physics, chemistry, and natural history, that students may be better prepared to profit by courses of lectures on these subjects.

M. Camille Fleury, of Chaumont, insisted that at least each candidate should have made such study of Latin as the "Certificate of Grammar" implies. Now, when general instruction tends to assume a high character throughout France, and when primary instruction will doubtless be rendered obligatory, the veterinary profession must be exacting on any future candidates to insure public estimation.

M. Violet, of Sens, expressed the opinion of the veterinarians of the Department of l'Yonne, and asked that the Diploma of Bachelor of Arts (*Bachelier ès lettres*) be required for admission into the veterinary schools. Since the instruction has been extended, the pupils should be better prepared to appreciate it and complete university studies would best render them so.

M. Viseur, of Arras, would require of veterinary candidates the sure test of a "fourth class" in Latin; and he agrees with *M. Delplanque*, that it would be well to require from candidates the certificate of special secondary instruction, or else to make them undergo an examination in physics, chemistry, and natural history. Expense to their families must be a secondary consideration; the professional interests must be our first thought, and it would be better, though the number of candidates be but half the present, that those who are accepted be entirely in a position, by their primary special instruction, to follow advantageously the ever advancing course of instruction.

M. Griotet, of Toulouse, sustained the same opinion, that all candidates for the schools should have a collegiate education; then a preliminary examination of candidates might be made at the colleges nearest to their residences, whereby might be weeded out those who are not fit to fulfil the tests of the programme. Thus the examination before the Boards

of the Schools would be between candidates considered fit by the colleges, and the travelling expenses of candidates unsuccessful at the primary examination be saved for their families.

M. Lecornue, delegate for the Society of Nantes, required that the conditions of admission should be somewhat similar to those of the Bachelor of Science degree (*Baccalauréat ès Sciences*) so as to prepare for the time when the degree itself may be demanded. The higher the instruction required the more will the profession increase in public esteem. We need not consider the expense of this to the families of candidates. As things are at present many families spend more money in keeping future candidates at preparatory establishments, where only the matter required for admission to the schools is taught, than an extended university education would have required.

“Thus the praiseworthy sentiment which prevailed at the Congress has been to raise the profession gradually by the more complete preliminary instruction of those destined to become members of it. But it seems to me this would ill serve the interests of the profession by attempting progress without the necessary transitions which the nature of things requires. Also I expressed the thought that the time was not yet for requirement of university degrees by veterinary candidates such as many who took part in the discussion deem necessary; for, firstly, the profession is not so lucrative that we can exact from candidates destined for it the conditions required for university degrees. If it were disembarassed from the interference of empiricism by legal restraints or by advancement of public opinion, it could be more exacting than in the present state of things. We cannot offer enough to sanction high requirements. Would not a more rigorous programme of conditions than the present be inconvenient, by closing the schools to the sons of poor families, farmers, farriers, and empirics who, in consequence of their calling, often are destined for the profession, and are well adapted for it? It is necessary to distinguish between intelligence and the culture of intelligence. Has not experience shown, often strikingly, that such candidates, after entry in to our schools with education only sufficient for the examination, have by their work attained a leading position, in advance of all their fellow-students who have had complete university education. We must not, then, shut out from our schools the sons of poor men, for they have proved our best recruits! Besides, has not the present system given general satisfaction? Does it not encourage university

studies by allowing entry without examination of candidates furnished with a Diploma of Bachelor, and by affording advantages to candidates who can give evidence of more extended knowledge than the programme demands? Is not this well adapted to the necessities of recruiting for our ranks, since it leaves the entry into the profession open to those who are able only to satisfactorily fulfil the conditions of the programme, while it encourages higher education than that which the programme demands.

But is not the time come for the enlargement of the programme which we deem necessary to preserve, so far, intact in such a manner as to compel candidates to more extended studies which will the better adapt their minds to those to which they must give attention after admission. On this point there was complete agreement, as expressed by the resolution "that the conditions of admission into the veterinary schools should be so modified, that stress be laid upon such scientific matters as mathematics, chemistry, physics, and natural history."

On the question of suppression of the "extern pupil and free auditor system, the opinions of the Congress was equally unanimous. The extern system was founded in the consideration that it would suit a certain number of pupils who would wish to extend their studies by availing themselves of means of instruction outside the schools. It has not proved so, for the majority of extern pupils have availed themselves of their opportunity to enter into other matters than such as belong to their studies. In this respect the Congress did well to demand suppression of the "*externat*," and we know that its vote, perfectly in conformity as it was with the intentions of the administration, has been realised in the course of the same year."

At the same sitting the delicate question of private practice by the Clinical professors at the schools was handled.

M. Viseur considered that they should not practice outside the walls of the school, and should entirely confine their labours to instruction. They ought to simply act as consulting practitioners that they might retain the prominent position which they ought to have firm intention to maintain. As consultants they would have the aid of all their confrères who often having been their pupils, would preserve towards them the deference resulting from the nature of their first relations. Conflicting interests might otherwise cause forgetfulness of that deference which it is advisable to preserve.

M. Quivogne supported the same opinion by illustrations drawn from the town where he resides, of the difficulties

which result from rivalry between teacher and pupil. In a heated and applauded speech he laid down the respective parts of those who are charged with the duty of instruction, and of those who, having received lessons from these masters, ought to practise the profession. The former should remain men of science and should devote themselves wholly to its culture, the second having for their aim the application of the established principles in the exercise of practice.

M. Griolet, of Toulouse, also was of this opinion, and his observations on professors who practice privately testify to the small sympathy which exists between them and him, which has resulted from conflicting interests. Moderation was not always shown in consideration of the proceedings of professors practising privately, and the expressions made use of in this respect have frequently failed in propriety and justice, being expressed in the heat of argument. Without doubt it would be better in the interests of their course of instruction and of the high consideration in which they should remain (*entourés*), that they should abstain from the general round of practice and should act simply as consultants, whether for their confrères or for the administration of justice as experts and arbitrators. Though it would be better for them and for the school to which they are attached that it should be so, we by no means imply that they act more unsatisfactorily than professors in the medical and surgical faculties, who practise privately on a very large scale without any one attaching blame to them for it. Also, besides, a veterinary professor may be compelled, in order to support the too large expenses of a family, to seek a private practice as a supplement to the insufficient resources from his appointment.

The Congress voted that "the appointments of veterinary professors should be increased in value, that the holders of them may be enabled to abstain from private and carry on only consulting practice."

With regard to the course of instruction, some *desiderata* have been formulated.

M. Emile Thierry regretted that students are no longer practised in the performance of operations on living animals, and demanded a return to this method of instruction, without which, he thought, true practical veterinarians cannot be turned out.

M. Bouley found it necessary to give to the Congress explanations on the new measures which the administration had deemed necessary to adopt with regard to surgical operations as a teaching means. "Not many years ago as many

as 72 operations, mostly very painful, were practiced on the same animal. This passed without protest, since no one then appreciated the enormity of such practices. They were considered useful, and therefore justifiable. But now the Societies for the Protection of Animals have interfered, and they have excited a just commiseration with dumb animals, resulting happily in the prevention of many sufferings by them. We also have become amenable to this sentiment, and have been asked whether the so cruel sufferings which we accumulate in surgical experiment in our experimental operating theatres on a single animal are justified by the end. To this question, carefully examined, we can but give a negative reply. Is it not true, indeed, that the animals on which our pupils practiced so many operations simultaneously or successively, were placed in such conditions of restraint that their struggles, otherwise very feeble, were no longer a source of danger to the operator? Also, drained of their blood, there was scarcely left any to accumulate on the wounded surfaces, and hence the argument brought forward of difficulties in operation, produced by hæmorrhage and by suddenness of struggles, does not really here bear in favour of such means of education. Thus as concerns the operator, the animal is practically dead, since he no longer struggles; but he does not suffer the less, nor less cruelly and uselessly. Nothing, then, justifies the retention of practices formerly adopted; besides, the public sentiment has brought to bear on us active force with regard to that to which we have consented. It does not follow that the instruction of pupils will suffer by the suppression. It is not in the operating theatre that students obtain the best practical knowledge. We must look at things as they are. The animal operated upon having no value, the precautions recommended and observed in real practice are not adopted in casting him. With regard to positions, since there is no fear from struggling, students often take those which are most convenient, and opposed to all rule. Also we may note that the true apprenticeship for the exigencies of operative surgery is in the clinical operating theatre rather than in that of experimental surgery. Also we can accustom ourselves to the practice of operative surgery *on dead animals*, of which human surgery gives us ample proof. As for physiological vivisections, far from being forbidden, they are encouraged, for they are not only useful but indispensable. But we perform on one subject only one operation at a time, and not seventy-two, as formerly, upon one poor surgical victim. If the revenue of the schools would allow us thus to limit surgical operations for experi-

ment, they would be perfectly admissible, and no one would dream of suppressing them. But this is absolutely impossible."

M. Poisson, of Paris, pointed out a deficiency in the course of instruction of the Veterinary schools, which he believed remains now as when he was a pupil, the Bovine Clinic; and he proposed, as a means of improvement, that each establishment should be in relations with an agent who would undertake to send every month a certain number of pregnant cows who might, by coming in succession, initiate pupils in obstetric practice. *M. Bouley* showed the Congress that these *desiderata* have to a certain extent been secured, since by the attention of the Administration and the liberality of the House a farm has been attached to each school. Thus, the pupils now have subjects for observation and experience belonging to species such as our wards do not sufficiently supply; large and small ruminants, pigs, rabbits, and poultry; and they can be exercised in the practice of castration of male and female animals, can attend at parturitions, and can observe such cases of disease as occur. This is a step in the right direction; we must not, too, exaggerate the difficulties of obstetric practice: a very complete course is given at the schools by the aid of plates and models, and when young practitioners have scientific appreciation of the difficulties which may be met with in practice they can generally recognise and overcome them when they actually occur, as we may observe every day. *M. Foucher*, veterinary surgeon of the slaughter-houses of Paris, considered that a special course on meat inspection should be given at the schools, so that pupils might be in a position to occupy, with practical knowledge of the matter, the post which municipalities all tend to give to veterinarians to assure themselves of the healthiness of meat delivered for consumption. This *M. Foucher* might have assured himself is already provided for by reading the Ministerial proclamation recently published in the veterinary journals relating to the division of matters of instruction between the eight Professorships at present instituted. The inspection of butcher's meat is the object of a special course appropriated to the Chair of Contagious Diseases and Sanitary Police. The professors holding these will make it a duty to acquire the necessary experience on this matter by availing themselves of all means of observation and of study such as they will find in the abattoirs and the pupils can be initiated in the inspection of meat by numerous practical demonstrations. The opinion has been expressed that Odontology should hold

a place among matters of instruction ; no doubt the book by M. Thierry gave rise to this, but it by no means follows that because we can write on odontology we can make it a distinct course of instruction. And is not the best method of teaching to, as *M. Corneille* says, "teach by example?" The Congress adopted this view, and no vote was made on the matter. The composition of the Board of Examiners for the Veterinary Diploma received attention, and the vote expressed on this question is that veterinary practitioners should be associated with the professors, to give candidates all guarantees of complete impartiality. The Congress also asked that competition for the employment of imperfectly qualified veterinary assistants should be published. And it voted in favour of proofs of efficiency in knowledge of farriery which were formerly obligatory, but have been erased from the "pass" examination as being incompatible with the more complete conditions of instruction now required from candidates. The Congress, in affording support to this opinion expressed by some of its members, is inspired with the importance of shoeing and the advantages which it would confer on such veterinarians as are called upon to direct forges by conferring on them the authority of practical as well as theoretical knowledge of the art. A master is more respected if he can himself do what he orders. But there was no intention to return to the past conditions, to render proofs of knowledge of farriery obligatory. It seemed to be compatible with all views to keep a record, as may be determined, of the fitness of candidates as shown before the Board, in the art of shoeing and forging. The Congress was of this opinion. The following votes were expressed at the fourth sitting of the Congress:—

1. That the terms of admission into the veterinary schools should be so modified as to ensure importance to the following scientific subjects—Physics, Chemistry, Natural History, and Mathematics.

2. That the extern and free auditor systems should be abolished.

3. That the salaries of professors should be increased, that they may abstain from competitive private practice, and act only as consultants.

4. That in the examinations for admission into the profession account should be kept of the fitness of the candidates for forge duties.

5. That the competition for the employment of partially qualified veterinary assistants at the *Ecole de Cavalerie* should be public.

6. That in each school the Board for Examinations for the Diploma should be composed of Professors belonging to the three schools and of veterinary practitioners.

All these resolutions were unanimously adopted.

THE PRINCIPLES OF BOTANY.

By Professor JAMES BUCKMAN, F.G.S., F.L.S., &c. &c.

(Continued from p. 174.)

THE qualities, uses, and folklore of mistletoe will form the subject of the present chapter.

In very early days, in the history of England, there is no doubt but that mistletoe was the "All Heal" of the inhabitants of these islands, and, as employed by the Druids, it must have been an institution which it would be difficult to parallel.

The mistletoe occurs, according to Bentham, "on a great variety of trees, but especially on the *apple*, extending over the whole of temperate Europe, from Sweden to the Mediterranean, and far into Asia, but not everywhere abundant. Common in Southern, and especially western England; rare in the north, and not known in Scotland or Ireland."*

Common, however, as the parasitic shrub is with us now, we hesitate to consider it as an aboriginal native, and quite agree with our friend Edwin Lees, Esq., that "it would be curious to know how the plant got into Britain."

He goes on to say, "It must be an *introduction*, for strange to say, I never saw it *on the native* crab tree, though so common in planted orchards. Druids, perhaps, brought it over from the Continent, for it is even now very rare in the North of England, and it is very doubtful if it exists in Scotland."

Most of the trees on which it occurs have been introduced, and there seems reason to think that the early Celtic priesthood introduced many of the trees now looked on as natives, and with them the mistletoe also. Still there is reason to conclude that mistletoe on the oak was always a rarity, and though Dr. Daubeny gives the opinion that mistletoe-growing oaks were exterminated after the Druids were destroyed, we cannot help thinking that there has been more oak grown in England in modern than in Druidical times, and yet mistletoe oaks can be counted on the fingers, still a cunning priesthood would always have enough

* 'Handbook of the British Flora,' p. 266.

in hand for all practical purposes, well knowing that the virtues real or supposed would be the same from one tree as from another.

Mrs. Lankester having collected so much matter upon this interesting subject, we quote the following from 'English Botany':—

“The simple fact of the extreme rarity of oak-fed mistletoe appears to have given its sanctity in the early days of superstition and darkness. On a tree famous from all antiquity, and consecrated in the earliest ages—the very name of the priests of religion signifying a connection with oaks and oak-woods, it does not seem unnatural that the tiny plant deriving its life from this venerated tree and growing in a manner almost supernatural, when compared with surrounding vegetation, should have become invested with a mysterious sanctity.

Pliny writes of our British ancestors:—“The Druids (thus they call their chief priests) hold nothing in greater veneration than the mistletoe, and the tree on which it grows, provided only that it be the oak. They select groves of oak trees standing by themselves, and perform no sacred ceremonies without green oak foliage. Indeed, they truly believe that whenever the mistletoe grows upon the oak it has been sent from heaven, and they consider it a sign of a chosen tree. But the mistletoe is very rarely found upon the oak. When it is discovered, they proceed to collect it with very great devotion and ceremony, and especially on the sixth day of the moon. This period of the moon's age, when it has sufficient size, without having attained the half of its fulness, makes the beginning of their months and years, and of an age, which consists but of thirty years.” ‘C. Plinii Nat. Hist.,’ lib. xvi, c. 44.

The grand ceremony of cutting the mistletoe from the oak was the New Year's Day festival of the ancient Britons, and it was held on the sixth day of the moon, as near the 10th of March as the age of the moon permitted.

The New Year's Day festival of our forefathers would have fallen this present year on the 14th of March. The exact proceedings of the Druids on this great annual festival are thus described by Pliny:—“Calling the mistletoe, in their manner of speaking, a cure-all (or all-heal), and having got the sacrifices and the good things for the feast all properly ready under the tree, they lead up two white bulls, and begin by tying them by their horns to the tree. The Arch-Druid, clothed in a white robe, then mounts the tree and cuts the mistletoe with a golden sickle. It is caught as it falls in a white cloth. Then they offer up the victims as a sacrifice, praying that God would make his gift prosperous to those to whom it had been presented. They be-

lieved it would give fruitfulness to all barren animals, and would act as a remedy against all poisons."

The animals were killed, cut up, and cooked; meantime prayers were offered up, hymns were sung, and the heaven-born plant, thus carefully saved from pollution by any touch of the earth, was distributed in small sprigs amongst the people, as a sacred relic for the new year, a charm to insure fecundity, a panacea against every disease, a remedy for poisons, and a safe protection against witchcraft and the possession of the devil. Many a good wife travelled for days, perchance, on a pillion behind her husband, through bogs and fords, and over wide tracts of uncultivated land and primeval forest, to attend this festival, leading a sumpter-horse laden with their offerings to the priesthood, and all the good things they could muster for the festival,—venison and salmon, roasted bustards and boar's hams, with cakes and other delicacies, not forgetting some well-filled skins of metheglin or mead,—happy in being able, as a recompense for so much toil, to procure from the hand of the Arch-Druid, for herself and her husband, so many blessings in the coming year. The memory of the Druidical ceremonies is still kept up in Normandy, as they give mistletoe to each other on New Year's Day, by saying, "An qui l'an neuf," and in Picardy, they add the word "plantez," to wish a plentiful and prosperous new year to each other.

The medical reputation of the mistletoe does not seem to have disappeared with the Druids; for, although some of the ancients looked upon the mistletoe as poisonous, the old herbalist, Gerard, in 1636, gives his opinion as quite the reverse, and says, "A few berries of the mistletoe, bruised and strained into oile and drunken, hath presently and forthwith rid a greivous and sore stitch."

He also quotes Galen, who says, "His acrimony overcometh his bitterness, for if it be used in outward applications, it draweth humours from the deepest and most secret parts of the body, spreading and dispersing them aboard and digesting them."

We are inclined to think that the imagination of the patient had more to do with the efficacy of the mistletoe plasters, as it has with many modern and still favourite remedies, than any virtue in itself. The only practical use to which we now apply the berries of the mistletoe is the manufacture of birdlime.

In Prussia, in times of scarcity, the branches and leaves of the mistletoe have been used, powdered and mixed with rye flour, to make bread, which is by no means unwholesome.

Mr. Lees says, "The mistletoe still maintains a precarious place in rustic practice. I once asked a farmer who lived in the

neighbourhood of my residence, what he knew on the subject? and he said that the mistletoe of the oak, when it could be met with, was a capital thing for a *sick cow*; but especially after calving. Shades of the Druids! that “all-heal,” once gathered by a white robed Arch-Druid, with a golden hook, and received upon a stainless cloth, as the mystic gift of heaven, shorn of all its glories, and divested of all its sanitary powers as respects the human race, now only figures on the traditions of rural practitioners, as an aperient for an ailing cow.

Though mistletoe was the all-heal of the Druids, and was, perhaps, used medicinally in the middle ages, its use as a medicine is now utterly discarded, and it does not find a place in any modern book of medicinal plants.

At one time it was reputed to possess many healing powers, and to contain strong if not poisonous principles, but its use as advised by Thomas Tusser, gentleman, as food for sheep and cattle is decisively against its possessing any but feeding properties.

“In pruning and trimming all manner of trees,
Reserve to each cattle their properly fees;
If snow do continue, sheep hardly that fare
Crave *mistle* and ivy, for them for to spare.”*

Again, in January’s abstract we find this author directing—

“Now season is good
To lop or fell wood,
Prune trees some allows
For cattle to browse,
Give sheep to their fees
The *mistle* off trees.”

During the present hard winter we have seen it stated that mistletoe has frequently been given to cattle and sheep. We have, however, never seen it so employed, though we have every reason to believe it to be perfectly innocuous.

That the mistletoe has been highly extolled for its medicinal virtue from remote times is, doubtless, due to the great abundance of fruits on the fertile plants. The older writers seem to have held it in esteem as ministering to fertility; deriving the notion, in all probability, from the multitude of berries which grow on the plant—a notion which may have something to do with some of our Christmas observances. The mistletoe of the oak had such repute for ‘helping’ in the diseases incidental to infirmity and old age that it was called *Lignum sanctæ crucis* (wood of the Holy Cross); and, as the parasite is the same on one tree as on another, we may infer that the robust nature of the oak was supposed to impart to it strengthening properties. Ray is, perhaps the latest writer who has greatly extolled mistletoe.

* ‘January’s Husbandry.’

He mentions it as a specific in epilepsy, and as useful in apoplexy and giddiness. It is easy to see what gave countenance to this idea has been the fact that the parasite grows from the under part of the foster parent, with its head downwards, and hence we may take it for granted that, viewed in every way, it owes its repute to its peculiar structure. Its rich, bright, pearly seeds hanging in such abundance was in itself an emblem of fertility, and, if these grew on the oak, the same symbolism would point to it as augmenting its powers. It is, indeed, probable that ideas of this kind prompted the use of the mistletoe, which is still continued in Christmas rites. This doctrine of signatures, then, seems to have influenced the early use of most plants, and it may well be imagined the Christmas use of the mistletoe, under the boughs of which, while the kiss of affection was given, the mystic berries are often furtively plucked, either to be used as a medicine or held as a charm to secure some wished-for blessings.

We are told that, in one of Culpepper's MSS. at the British Museum, is a curious notice of Sir Peter Freschville's house at Staveley, Derbyshire, is this passage: "Heare my Lord Freschville did live, and heare grows the famous mistletoe tree, the only oake in England that bears mistletoe;" and to this tree the following letter, written between 1663 and 1682, from the Countess of Danby to Mrs. Culpepper probably refers:—

"DEAR COZEN,—Pray, if you have any of the mistletoe of your father's oke, oblige me so far as to send sum of it to your most affectionate servant,
BRIDGET DANBY."*

With such views respecting mistletoe it is not to be wondered at that it should be so little used in church ornament, upon which a writer in the *Quarterly Review* says:—"It seems something like caprice, which has excluded the mistletoe as well from the decorations of our churches at present as from their ancient sculpture and carvings. We know of one instance only of its occurrence. Sprays of mistletoe, with leaf and berry, fill the spandrills of one of the very remarkable tombs in Bristol cathedral, which were probably designed by some artist-monk in the household of the Berkeleys, whose ample and broad lands are among the chief glories of the west country, in which the mistletoe is now, for the most part, found. We do not remember to have seen it elsewhere, even lurking, among quaint devices of 'Miserere;' whilst the oak, every portion of which, in the days of Celtic heathenism, was almost as sacred as the mistletoe which grew on it, was one of the principal trees 'studied' by mediæval sculptors when, during the so-called 'decorated' period, they reproduced leaf and flower with such exquisite beauty and

* 'Notes and Queries,' vi, 119, first series.

fidelity; witness the oak leaves laid into the panels of the cantalupe shrine at Hereford, or the twisted sprays of oak, clustered with acorns, which form one of the most graceful corbels in the choir of Exeter cathedral.”* It must be remembered that, while our houses may be garlanded with anything green, the mistletoe is properly excluded from sacred adornment. Purity of thought† requires this in a structure dedicated to divine worship. The holly, bay, laurustinus, and ivy have no associations incompatible with prayerful thoughts; but the mistletoe has other remembrances, and has always been considered a profane plant, from having been dedicated to the Scandinavian Venus, and so wrapt up in mythological fable.

We learn from Mr. Lees that—“Archdeacon Nares, who has written very learnedly on this subject, and seems to be a great friend to the mystic rites of the mistletoe, deprecates any unseasonable resistance on the part of the ladies taken or caught under the sacred plant, as he states that a non-performance of the usual ceremonial brings in its train all the evils of old-maidenism. It appears that the berries of the plant alone constituted its privilege; one was to be plucked at every salute, and various authorities insist that, when the last berry is plucked from the bush, its potential and venerated character ceases.

“One single berry yet remains,
Untouch’d by rude and vulgar swains;
By all unpluck’d; it seems to say,
Whate’er has pass’d is Christmas play;
But now, ere comes the vernal breeze,
The last chance fortune offers seize.”‡

These reflections lead me to the consideration of the oak in a commercial point of view. Mr. Lees, of Worcester, and Dr. Bull, of Hereford, both being orchard counties, point to the immense amount of the parasite which is annually sent by train from Worcester and Hereford, principally by rail, for use at the Christmas festival. It amounts to many hundreds of tons, fetching we are told as much as 5s. per hundred-weight.

It is probable from these facts that mistletoe is *allowed* to grow on our orchard and other trees, and, as far as we know, it has never been questioned whether it does mischief in such a position or not, but if any one will only examine the attenuation of any tree above the juncture of the mistletoe, it will surely have the effect of putting this matter in a proper light.

The accompanying engraving is from our drawing of a branch of whitethorn of as much as six inches in circumference below the point of attachment of the parasite, and only about an inch

* ‘Quarterly Review,’ vol. cxiv, p. 220.

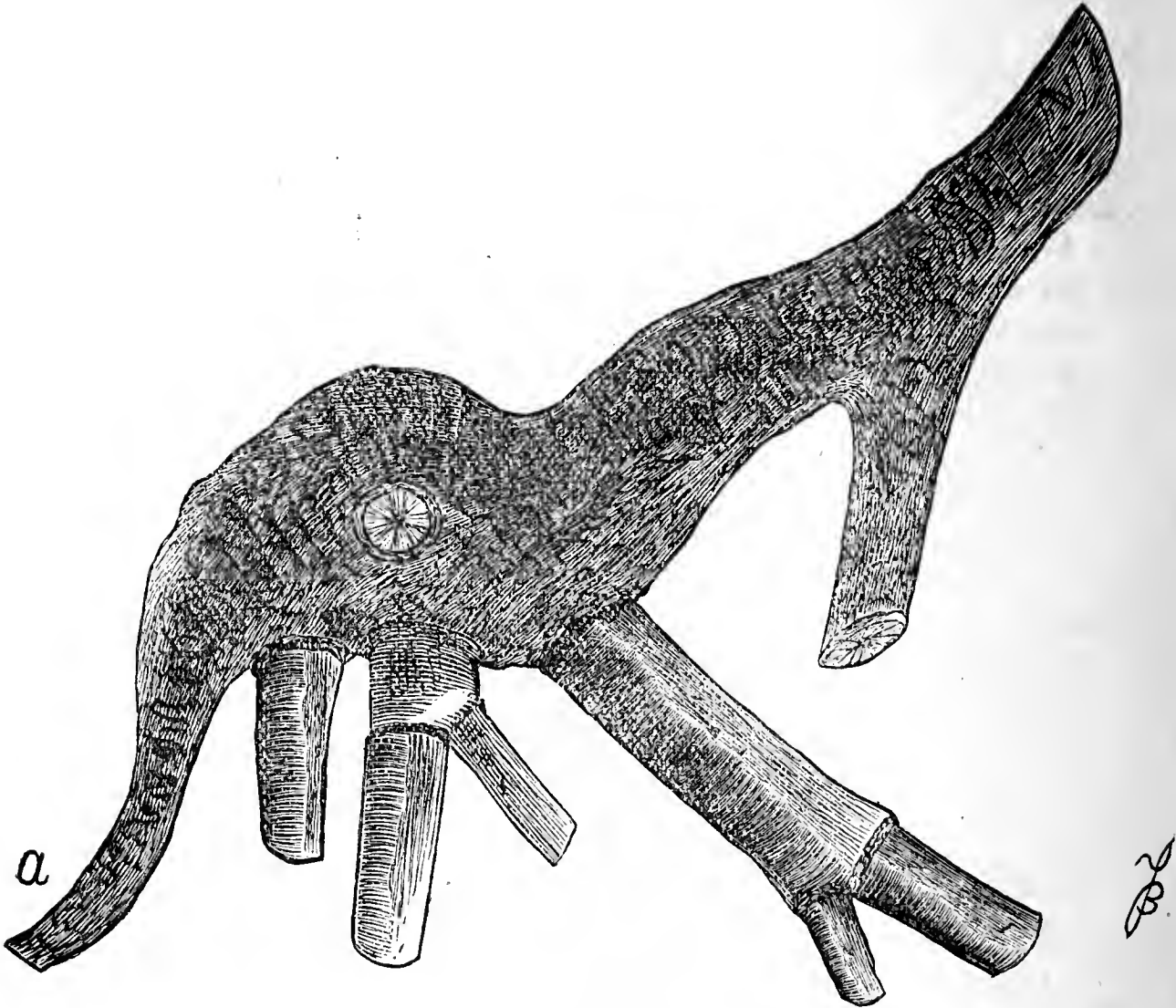
† ‘Botanical Looker-out,’ p. 40.

‡ Ibid., second edition, p. 41.

above; and, indeed, it is not at all uncommon to see branches, and even trees, killed from the effects of a vigorous growth of mistletoe—that

“False, detested parasite.”

When we consider that this is a true parasite, or one that lives



on the very juices that were prepared for the growth of the foster-parent, we must at once see that the mistletoe cannot possibly be a friend to the orchard.

Still, however, farmers will tell us that trees which have this plant on them not only bear better, as a rule, but the fruit is sweeter than others, so that not unfrequently they have been brought to consider it as a friend rather than as a foe. Now, there is some truth in this, but if we look for the reason for it, we shall see that it only confirms our view of the detested nature of the parasite.

The mode in which the mistletoe grows shows that it can only act by crippling the trees in which it has established itself, and, consequently, even young trees in which much of this plant is to be found will usually be greatly aged in appearance. The

bark will be rugged, the limbs gnarled, and altogether the trees assume a wizened and antique aspect, although the stem by no means would betoken an age to correspond. Such trees bear small fruit, but, perhaps, more abundantly than those that keep up a more vigorously abundant leafy constitution. Hence, then, mistletoe in an apple tree has one of the effects of pruning, as it arrests that development of leaf, which is one of the causes of the production of fruit, and is, indeed, the reason for trees fruiting better under judicious pruning.

The good or evil, then, which may result from the presence of mistletoe would seem to be pretty much a question as to whether the trees in which it occurs are to be calculated upon in the position of the landlord or the tenant. If the latter it may be pretty confidently stated that he derives good rather than evil from its presence. It is true the trees wear out that are so fed upon, but then their destruction by this mode is a matter of time, and may well enough last out the longest lease.

The landlord, however, who would wish to see an orchard grow vigorously, and to remit it in that state to his posterity, will care little for early fruiting in any great quantity; it is obviously therefore to his interest to have the trees kept clear from mistletoe, as then the bark keeps smooth instead of rough, either by age or a cause similar in its effects, in which case the trees are easier kept clean and free from insect blights, which in unhealthy trees are ever so rife.

Of course, in timber trees this parasite is an unmitigated pest, feeding as it does on those very juices of the foster parent by which the wood of the tree is built up.

From these remarks we conclude that curious as is the mistletoe, and albeit however interesting and exciting may be the customs in which it is introduced, yet that this parasite is in reality little less than a weed to the farmer.

Still, though this is so, we see by the *Gardener's Chronicle* that Richard Smith and Co., nurserymen, of Worcester, advertise apple trees with mistletoe growing on them, and as this is the favourite tree of the parasite, there can be no doubt that the interest of the subject will lead many people to grow specimens of these as a ready way not only of securing the mystic plant for Christmas usages, but as a means of observing its curious natural history.

“VETERINARY PROGRESS:” WHAT NEXT, AND NEXT?

By THOMAS GREAVES, F.R.C.V.S., Manchester.

It would be a pleasing theme to review the course of events in our profession since the obtainment of our Charter in 1844, to bring under notice the various panacea which have been prescribed for the benefit of our profession, and then sum up the measures which have been adopted, and the results produced by them.

It is not my intention in the present paper to make an elaborate exposition of the many valuable suggestions made by estimable men from time to time, or revert to the objections ever offered by contentious, carping individuals, who seem to have an eye only to find fault with the efforts of others, but who are affected with a singular barrenness of better suggestions to propose in their stead.

I shall content myself with simply alluding to a few of the many matters which have engaged the attention of the profession during the last decade. 1st. The institution of the practical examination of the student, in addition to the ordinary examinations of the Court of Examiners, for the diploma. 2nd. The preliminary or matriculatory examination of the youth when he enters college. 3rd. The arranging of the examination into three sections, enabling the student to concentrate his whole attention on separate subjects. 4th. The extended curriculum of studies at college to three years or five terms. 5th. The examiners of the Court of Examiners elected for a term of five years, instead of for life, as heretofore. 6th. The institution of the Fellowship degree. 7th. The granting of a new Charter, enabling us to hold our annual meeting in Edinburgh every third year, instead of being confined to London, in accordance with provisions of the previous Charter. 8th. The power given to the whole body of the profession to record their votes for members of council by voting papers, instead of having to attend personally in Red Lion Square on the first Monday in May in each year for that purpose. 9th. The agreement entered into between the Royal College of Veterinary Surgeons and the Highland and Agricultural Society of Scotland to discontinue the Highland and Agricultural Society's examination, and the absorption into the body corporate of those gentlemen who hold only the Highland and Agricultural Society's certificate. 10th. The Supple-

mental Charter now being obtained to enable us to carry this agreement out, and thus realising the grand idea, a consummation so devoutly to be wished for, viz. *an united profession*.

These ten subjects are a few of the measures which have been worked out by the Council of the Royal College of Veterinary Surgeons. Several of them were ripe for carrying when our present noble and worthy President came upon the scene, and by his influence and admirable business tact, have been carried irresistibly to a successful issue. I could not expatiate upon the great good which must accrue from each of them separately, but I feel sure it must be self-evident to every member of my profession that most of these measures I have earnestly advocated in my writings, my addresses, and my votes for the last twenty or thirty years. Although much has been done, “ *there is still more work to do.*” We are now an united body. We have no body of men antagonistic to us. We can now apply to Parliament for an Act, and in that Act we can ensure for ourselves all that we can reasonably desire.

WHAT DOES THE PROFESSION REQUIRE?

In the proposed Act of Parliament I suggest that we stipulate for four things:—1st. The penal clause. 2nd. The apprenticeship clause. 3rd. The preliminary or matriculatory examination of the student to be placed in the hands of the Royal College of Veterinary Surgeons instead of, as now, in the hands of each teaching school. 4th. The Court of Examiners to be composed of veterinary surgeons only.

The Penal Clause.—This clause, it must be understood, cannot be obtained in a charter. A charter is a legal document granted by the Queen and her ministers, not by Parliament. The Queen has not the power by the Constitution of England to inflict a fine, not even half-a-crown, on any one of her subjects. The clause in an Act of Parliament would give a magistrate the power to inflict a fine or imprisonment on any person using the name or title of veterinary surgeon, unless such person possessed the diploma of the Royal College of Veterinary Surgeons. The fine would be fixed by the Act, probably £5 or £10 for each offence, but it must not be misunderstood. Such person is not in the least precluded from practising by this penal clause. He can call himself by some other title, and if he is a shrewd and clever man, can and will command more or less practice, and in some cases will continue, as he does now, to deprive the qualified man of more or less income, and in some cases

beat him entirely out of the field; hence the absolute necessity of the qualified veterinary surgeon being made a thoroughly practical as well as a scientific man.

The Apprenticeship Clause.—This clause I esteem of far greater importance than the one above. I know there are some who entertain other views on this subject, but having an extensive acquaintance with and knowledge of the opinion of my professional brethren in every part of England, Ireland, and Scotland, I believe if the whole of the profession could be polled to-morrow, eight out of every ten would record their vote in favour of the apprenticeship clause. The veterinary surgeon, however well educated he may be, labours under an immense disadvantage throughout life if he has seen only the practice which comes under his observation at college; but if he has been accustomed and inured to the work of attending sick and lame horses, &c., and is bound to produce an indenture of apprenticeship showing that he has served three years with a veterinary surgeon when he enters college, such a one (provided always that he possessed a good sound English education and a good intellectual capacity) is the man most likely to bring credit upon himself and upon the profession to which he belongs. The late Professor Spooner has often said in my hearing, "We do not profess, nay, it is impossible for us, to give a youth a sufficient practical instruction during his period of study at college."

Extract from the late Professor Spooner's Address (page 510, *Veterinarian*, 1870).—"The question of the propriety of introducing an apprenticeship clause was brought before the Council shortly after the Charter was obtained, but the corporate body had no authority whatever with reference to the education of the pupil prior to his entering either of the Colleges, and there was great opposition offered to the insertion of such a clause in the bye-laws, and the proposal fell to the ground. At the time he was opposed to the introduction of the clause; not only did he think it was not expedient, but he also felt that the Council had no such authority, but subsequent reflection and experience had induced him to alter his views as regards the advisability of a youth being placed under tuition of a practising veterinary surgeon prior to his presenting himself for his final examination for the diploma of the College, and he was the more convinced of the correctness of his present view from what had recently occurred in the Council, viz., the resolution to establish practical examinations. He had advocated such examination for more than a quarter of a century, but he had

seen so many difficulties in the way of carrying them out, not only with reference to pathology, but also with reference to anatomy, that he had hesitated to make any stir in the matter.

“ The Council had, however, now decided that a practical examination should take place, and the pupil, therefore, must in future be practically educated. The question then arose, How was he to obtain the education? *It would not be imparted efficiently in collegiate institutions.*

“ No doubt some who entered the schools without any previous instruction would, by diligently applying their minds to the study, become ornaments to the profession. He could relate several such instances, but still it was unquestionably better that a pupil should be competent to undergo a practical examination. At the Royal Veterinary College there were rarely less than seventy patients, and operations were being constantly performed; but how could manipulative instructions be given to 100 or 150 young men at once. *He therefore looked to the profession at large to assist the young men, and not shirk the responsibility of taking them as pupils before they came to College.* It was the duty of the profession to afford every facility to those who wished to acquire a practical knowledge of the veterinary art, and to render the expense attending its acquisition as little as possible.”

The Preliminary or Matriculatory Examination.—This, as it is now carried out, is considered exceedingly unsatisfactory and objectionable. There is no concerted action between the four teaching schools; each school appoints its own examiners, and settles the extent and nature of the examination, subjects to be examined upon, &c. Now, it shows, upon the very face of it, that the examinations will be unequal. This has been the case all the way through. Until lately the Principal of one of the schools was his own examiner, and we all know it is against human nature that he would reject his own students, and throw away his own living. I have been present at some of these examinations, and feel bound to admit the examination was conducted with perfect fairness and in a satisfactory manner. At the opening of the last session at Camden Town a youth who had betaken himself to one of the schools in Scotland was examined there, and passed his preliminary; he applied for his certificate, but was refused until he entered that College; he then presented himself at another school in the same city, was examined, and passed; he applied for his certificate and got it; then he returned to London with this cer-

tificate, and entered that school. This may be called sharp practice, but it is just the kind of thing the system is open to. If the preliminary examination were in the hands of the Royal College of Veterinary Surgeons the appointment of examiners would be such that the tests would be equal at each of the four schools ; any sharp practices, such as the one above referred to, would be provided against and be impossible ; the advantage of this is self-evident.

The Court of Examiners to be composed of Veterinary Examiners only.—I am fully aware that there are some of my professional brethren who still hold the opinion that we cannot yet, if we ever shall, be in a position to do without the assistance of extraneous help at the chemistry table ; that there is not one man in the whole profession competent to fulfil the duty of examiner at that table. I say I think this speaks very badly indeed for my professional brethren if it is so, but more especially so of those who are our teachers. I have no hesitation whatever in saying that there are numbers of young men who have distinguished themselves in chemistry whilst at College who could very soon so rub up their scientific chemistry as to be quite competent to undertake the duty—quite equal to the teaching. Let us only remember we have been in existence about one hundred years ; are we still too young to be entrusted to try to walk alone ? are we still to be kept in swaddling clothes, in leading-strings for another century ?

I would here refer to an authority—a far greater authority than any now living in England. I allude to the late Professor Spooner. He said, “ With regard to the Court of Examiners itself, it was said the time had not yet arrived when the College could dispense with a prop and pillar of support of which it had availed itself since its commencement ; but surely men could now be found within the body of the profession who were competent to determine as to the qualification of a candidate for a diploma of the College. He would be the very last man to advocate the removal from the Court of Examiners of any of those gentlemen who had so ably supported them at the physiological, chemistry, and materia medica tables ; but, at the same time, he would say that so long as that pillar of support remained bound to the tree, so long would it require its aid. Remove it and the winds might blow it, and it might yield to some extent, but its roots would become strengthened by virtue of its self-supporting power, and then you could throw off the extraneous aid. *No more then would he admit members foreign to their body after this period to the Court of*

Examiners. He thought the first members of the Court to be dispensed with were those who examined on physiology and anatomy. As to chemistry and materia medica, the probability was that it would be a longer period before the services of such gentlemen as were now examining upon those subjects could be dispensed with.

During the period I was President of the Royal College of Veterinary Surgeons I presided over thirteen examinations of the students for diplomas, of three hours' duration each, in London and in Edinburgh. I made a practice of leaving the presidential chair, and sitting at each table a quarter of an hour at a time. I listened attentively to every question asked and to every answer given ; and I feel bound to state that the questions asked were such that every student ought to be able to answer. I closely observed the nature of the different questions in chemistry, materia medica, and in physiology ; and I candidly and freely admit that I did not see that there were any matters of such profundity or abstruseness but what could be readily and fully grasped and understood by an intelligent and fairly-educated veterinary surgeon who had kept up his scientific readings ; besides, we know that at College there are some students who take a greater pleasure in studying chemistry and materia medica than others, and that these excel in this particular study, and when they know that by making themselves extra proficient in these subjects they may be called upon to fill the high and honorable post of examiner—an inducement that does not now exist—this laudable aspiration, inciting and impelling numbers of students, will of itself be a powerful lever in raising our profession to a still higher status. I attended also the examinations of the Highland and Agricultural Society's Board, and carefully listened to every question asked and answered at the different tables ; so it will be perceived I have had opportunities of forming an opinion on this question above what the average veterinary surgeon has had ; and I do not hesitate in stating, most emphatically, that the Court of Examiners could, without any diminution of its efficiency, be in future composed of veterinary surgeons only, and that it would tend to exalt our position as members of a scientific profession.

CASES OF "ROT" AFFECTING CATTLE.

Recorded by F. BLAKEWAY, M.R.C.V.S., Stourbridge.

THESE cattle were the property of Messrs. Webb & Sons, seed merchants, and were pastured on the Dunsley Farm, near Stourbridge, the meadows of which are bordering on the river Stour. The situation is very low and the meadows are very damp, and have been noted for a long time past as injurious to stock; in fact, a former occupier of this farm one year lost all his cows.

The cattle alluded to were found to be not doing well, but Messrs. Webb thought it was owing to their being kept all night on the pasture ground, and having no dry food; they therefore turned them out during the day, sheltering and feeding them well at night. This went on during the winter of 1875 and 1876, and in February, 1876, I was sent for to see a calving cow; she was very prostrate and weak, although fairly fat. After calving she rapidly lost flesh, and went on as badly as possible, death soon taking place. Two more calved the next week without help, but gradually sank.

Upon making a *post-mortem* examination I found that the animals were affected with true rot. There were thousands of flukes in the liver and gall ducts, with thickening of the walls of the latter. The flesh was in a very watery and blanched condition. The viscera were also pale in colour, but there was not much serous fluid in the abdomen. The remaining cattle had a thorough change of food and situation; mineral and vegetable tonics were given; but, spite of this, they all did badly; some of them died or were killed, and the rest were sold. Messrs. Webb have used great care since, and have had no further disease.

CASE OF ABDOMINAL ENCEPHALOID CANCEROUS DISEASE IN A RIG PONY.

Communicated by EDW. SLIPPER, Student Royal Veterinary College.

MR. SHIPLEY, of Southtown, Great Yarmouth, forwarded to me a specimen of the disease above named, the particu-

lars of which, I think, are likely to prove interesting, more especially as the subject of *Cryptorchids* has recently received an increased amount of attention. The patient was an aged grey pony, which had been used by a tradesman for some years past; he was remarkable for being a good worker, and a "rig," and had not been known to exhibit any signs of disease until the 18th of January last, when, though still at work, he fell off his feed. A careful examination was made, but nothing abnormal was detected. A mild stimulant was given, and quietude and nursing recommended, but a few days after the case still retained its indefinite character—the mucous membranes were slightly tinged yellow, bowels torpid, abdomen rather distended, urine passed freely and in rather large quantities, dulness, and want of appetite. These symptoms existed until death, which occurred on the 21st day of February.

During the course of the attack symptoms of pain were manifested by the animal pointing his feet and occasionally pawing. Until a day or two before his death he never laid down.

The case being obscure, stimulants and occasionally laxative agents were given, the animal's strength being supported by means of gruel; the laxatives, however, had no marked effect.

Disease of mesenteric glands was diagnosed, but it was surmised that the liver was also enlarged. The animal before death was reduced to an exceedingly emaciated condition.

Mr. Shipley, in a subsequent letter, informed me that no examination per rectum was made, as the patient offered considerable resistance to the introduction of anything into the bowel. The animal passed small button-like portions of fæces throughout the greater portion of the attack. There were but very slight symptoms of abdominal pain. When undisturbed, the animal was to all appearances sleeping.

Mr. Shipley kindly forwarded the specimen to me, and I deemed it of so interesting a nature that I brought it before the Veterinary Medical Association at one of its meetings. Mr. Steel, secretary of the association, kindly forwarded me the following record of his examination of the case:

"The parts consist of the lumbar region with the organs occupying it. An immense lobulated mass occupied the whole of the region, extending from the last rib to the brim of the pelvis from the left kidney in front and connected with the left testicle, which is in a diseased condition, only by a very circumscribed ligamentous band. The tumour weighs twenty pounds, including the structures which it

surrounds. There are very considerable masses of clotted blood on each side of the central line against the *psoæ* muscles, which are in an atrophied condition these clots separate the muscles from the upper surface of the tumour. A fracture extends through the neck of each ileum transversely; the blood-vessels in connection with this are ruptured. The clot extends backwards into the pelvis. The morbid deposit invades the *psoæ* muscles and surrounds the posterior aorta, and extends a little way beyond its bifurcation. The growth presents every phase of development, from the softened condition to the hard consistent mass of recent deposit, and some of it bulges into the posterior vena cava. The right ureter is considerably enlarged and runs into the right side of the mass, by which it is surrounded, and which seems to have completely embedded its walls, for if we expose the portion of it situated within the tumour we find the canal dilated and the walls irregular. The right kidney is not unusually large. The left contains a viscid gelatinous fluid, and is mainly occupied by three large cavities; it lies firmly against the tumour substance but is not invaded by it; it is extremely small; its ureter is very dilated at its commencement, and passes slightly into the mass of the tumour, presenting a similar arrangement to that of the opposite side; shortly, however, it becomes completely blocked up. Section through the centre of the tumour shows that it has a fibrous stroma, the loculi of which are occupied, the central ones by a substance resembling palm butter, the outer present the ordinary encephaloid appearance. The left testis, which is in the abdominal cavity, has its structure completely broken down; on section it presents a variously coloured surface, especially dark towards the centre, and anteriorly traces of calcareous deposit; it is about eight inches in length, and of a corresponding breadth and thickness. From its lower extremity hangs a double lobulated mass, the inferior division of which is commencing to undergo a caseous change. The surface of the organ is not materially altered in outline, but is covered with small lobular growths. The epididymis is very much enlarged and diseased in a manner somewhat similar to the corresponding testicle; this enlargement extends throughout the structure of the cord for a distance of about eight inches. The anterior extremity of the epididymis and the anterior part of the cord are the principal seats of disease. I am inclined to think that the disease primarily existed in the testicle for some time; from thence it extended through lymphatics of the cord to the sublumbar glands, the disease of the kidneys being purely secondary. The character of the sublumbar

tumour seems to indicate that it is of recent growth ; its size is sufficient to cause it to press on the commencement of the rectum. The rectum contains a small quantity of soft, light coloured fæces, the bladder a small quantity of very thick urine. The hæmorrhage may have been the immediate cause of death. Mr. Shipley considers that the fracture that caused it may have been due to the animal falling down shortly before death.

Professor Axe made a microscopical examination of the specimen, and is of an opinion that it is decidedly of an encephaloid nature, the sublumbar mass being of recent and rapid growth.

Pathological Contributions.

SERIOUS LOSS OF CATTLE FROM EATING YEW.

WE regret to state that Mr. John Paxton, the well-known agriculturist, of Willingdon, Sussex, has just sustained a serious loss of cattle from eating yew. It appears that between thirty and forty head of beasts, chiefly, if not wholly, consisting of Welsh runts, which had recently cost something like £18 a head, were placed by Mr. Paxton at agistment in the park at Ratton. They were seen all right on Sunday, but on the following morning it was discovered that by some means—whether from the gate having been left open, or from the fence being defective, does not yet appear—a number of the animals had got into an adjoining shrubbery, and had eaten freely of the leaves of a yew tree, which is a strong irritant poison. Five of the runts lay dead, and others quickly followed, before the Messrs. Crowhurst, veterinary surgeons, of Horsebridge, who were quickly sent for, could reach the spot. Antidotes were applied with beneficial effect in many of the milder cases, but no less than fourteen died.—*Sussex Express*.

THE CONTAGIOUS DISEASES (ANIMALS) ACT, 1869.

RETURN of the Number of Places in Great Britain upon which contagious or infectious disease (except sheep-scab) has been reported to have existed during the week ended March 8th, 1879, with particulars relating thereto.

PLEURO-PNEUMONIA.

| | Farms or other Places. | | | Cattle attacked. | | Diseased Cattle. | | | | Cases which existed in previous Weeks not reported until this Week. | |
|--|--|---|---|--|---------------------------|------------------|-------|------------|------------|---|------------------|
| | Number reported upon this Week which have been previously reported upon. | Number upon which Fresh Outbreaks have been reported to have taken place during the Week. | Total Number reported upon during the Week. | Remaining diseased from the previous Week. | Attacked during the Week. | Killed. | Died. | Recovered. | Remaining. | Fresh Outbreaks. | Cattle attacked. |
| ENGLAND. | | | | | | | | | | | |
| COUNTY.* | | | | | | | | | | | |
| Cambridge (ex. Liberty of the Isle of Ely) | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Cumberland . . . | 4 | ... | 4 | ... | 1 | 1 | ... | ... | ... | ... | ... |
| Derby . . . | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Essex . . . | 11 | ... | 11 | ... | 2 | 3 | ... | ... | 1 | 1 | 1 |
| Huntingdon . . . | 2 | ... | 2 | ... | ... | 4 | ... | ... | ... | ... | ... |
| Kent (ex. Metropolis) | 4 | 1 | 5 | ... | 4 | 11 | ... | ... | ... | ... | ... |
| Lancaster . . . | 10 | 1 | 11 | ... | 11 | 1 | ... | ... | ... | ... | ... |
| Leicester . . . | 2 | 1 | 3 | ... | 1 | ... | ... | ... | ... | ... | ... |
| Lincoln, Parts of Holland | 2 | ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... |
| ” Parts of Kesteven | 1 | ... | 1 | ... | ... | 1 | ... | ... | ... | ... | ... |
| ” Parts of Lindsey | 1 | ... | 1 | ... | 1 | 2 | ... | ... | ... | ... | ... |
| Middlesex (ex. Metropolis) | 1 | 2 | 3 | ... | 2 | 5 | ... | ... | 1 | ... | ... |
| Norfolk . . . | 4 | 1 | 5 | ... | 6 | 2 | ... | ... | ... | ... | ... |
| Northampton (ex. Soke of Peterborough). | 4 | ... | 4 | 2 | ... | 2 | ... | ... | ... | ... | ... |

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GLANDERS.

| ENGLAND, COUNTY.* | | | | Horses attacked. | | Diseased Horses. | | | Horses attacked. |
|--------------------------|---|-----|---|------------------|-----|------------------|-----|-----|------------------|
| | | | | | | | | | |
| Berks | 1 | ... | 1 | 2 | ... | ... | ... | 2 | ... |
| Hants | 1 | 1 | 2 | ... | ... | ... | ... | ... | ... |
| Sussex | 1 | ... | 1 | ... | ... | ... | ... | ... | ... |
| The Metropolis | 1 | 4 | 5 | ... | ... | ... | ... | ... | ... |
| TOTAL | 4 | 5 | 9 | 2 | 6 | ... | ... | 2 | ... |

FARCY.

| ENGLAND, COUNTY.* | | | | | | | | | | |
|---------------------------------|---|-----|---|---|-----|-----|-----|-----|-----|-----|
| | | | | | | | | | | |
| Huntingdon | 1 | ... | 1 | 1 | ... | ... | ... | 1 | ... | ... |
| Kent (ex. Metropolis) | 1 | ... | 1 | 1 | ... | ... | ... | 1 | ... | ... |
| Oxford | 1 | ... | 1 | 1 | ... | ... | ... | ... | ... | ... |
| The Metropolis | 2 | 4 | 6 | 6 | 5 | ... | ... | 6 | ... | ... |
| TOTAL | 5 | 4 | 9 | 9 | 5 | ... | ... | 8 | ... | ... |

TYPHOID FEVER OF SWINE.

| ENGLAND, COUNTY.* | | | | | | | | | | Swine attacked. |
|--|-----|-----|---|-----|-----|-----|-----|-----|-----|-----------------|
| | | | | | | | | | | |
| Bedford | 2 | 1 | 3 | 4 | 1 | 1 | 4 | ... | 1 | 3 |
| Berks | 1 | 2 | 3 | ... | 11 | ... | 2 | ... | ... | ... |
| Cambridge (ex. Liberty of the Isle of Ely) | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... |
| Derby | ... | 1 | 1 | ... | 5 | ... | 1 | ... | ... | ... |
| Dorset | 1 | ... | 1 | 9 | ... | ... | 3 | ... | 1 | 9 |
| Hants | 1 | ... | 1 | 3 | ... | ... | ... | ... | ... | ... |
| Huntingdon | 2 | 3 | 5 | 20 | 40 | 37 | 11 | ... | ... | ... |

TYPHOID FEVER OF SWINE—*continued*.

| | Farms or other Places. | | | Swine attacked. | | Diseased Swine. | | | | Cases which existed in previous Weeks not reported until this Week. | |
|---|--|--|---|--|---------------------------|-----------------|-----------|------------|------------|---|-----------------|
| | Number reported upon this Week which have been previously reported upon. | Number upon which Fresh Outbreaks have been reported to during the Week. | Total Number reported upon during the Week. | Remaining diseased from the previous Week. | Attacked during the Week. | Killed. | Died. | Recovered. | Remaining. | Fresh Outbreaks. | Swine attacked. |
| ENGLAND, COUNTY.— <i>contd.</i> | | | | | | | | | | | |
| Middlesex (ex. Metropolis) . | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Monmouth . | ... | 1 | 1 | ... | 1 | ... | ... | ... | 1 | ... | ... |
| Norfolk . | 2 | 4 | 6 | 17 | 26 | 40 | 3 | ... | ... | ... | ... |
| Northampton (ex. Soke of Peterborough). | 2 | ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... |
| Oxford . | 1 | ... | 1 | 6 | ... | 1 | 1 | ... | 4 | ... | ... |
| Salop . | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Somerset . | 1 | ... | 1 | ... | 1 | 1 | ... | ... | ... | ... | ... |
| Stafford . | ... | 1 | 1 | ... | 1 | ... | 1 | ... | ... | ... | ... |
| Suffolk . | 1 | 3 | 4 | ... | 29 | 23 | 6 | ... | ... | ... | ... |
| Sussex . | ... | 1 | 1 | ... | 3 | 3 | ... | ... | ... | ... | ... |
| Wilts . | 2 | 1 | 3 | 34 | 2 | 13 | 13 | ... | 10 | ... | ... |
| York, West Riding . | 1 | 2 | 3 | ... | 4 | 3 | 1 | ... | ... | ... | ... |
| Liberty of the Isle of Ely . | 1 | 1 | 2 | ... | 1 | ... | 1 | ... | ... | ... | ... |
| Soke of Peterborough . | 1 | ... | 1 | 1 | 1 | 2 | ... | ... | ... | ... | ... |
| TOTAL . | 22 | 21 | 43 | 94 | 126 | 138 | 47 | ... | 35 | 2 | 12 |

* Counties include such boroughs and burghs as are locally situated within the limits of the Counties, or, if surrounded by two or more counties, then they are included in the county with which they have the longest common boundary. Berwick-upon-Tweed is included in Northumberland.

Veterinary Department, Privy Council Office, 18th March, 1879.

CATTLE PLAGUE.

THE cattle plague still continues to prevail in the following provinces of Russia, namely: Bessarabia, Volhynia, Ekaterinoslav, Taurida, Kherson and St. Petersburg.

In Austria the cattle plague continues to exist in fourteen districts of Galicia, in five districts of Dalmatia, in four districts of the Slavonia Military Frontier, and in one district of Fiume. Hungary, Croatia, and Slavonia are said to be free from the plague.

The cattle plague was officially declared to be extinct throughout the German Empire on the 6th of March, all the infected places in the Government of Merseburg having been declared free from the plague, and that no fresh case of the disease had occurred since the 8th of February.

Facts and Observations.

PIG TYPHOID.—The typhoid fever which recently proved fatal to a large number of pigs in the neighbourhood of Chieveley, near Newbury, has just broken out among the swine on several farms in the Elsley district of Berkshire.

DISEASED AMERICAN CATTLE.—Pleuro-pneumonia is reported to have been detected in no less than twenty animals, part of the cargoes of American cattle imported into Liverpool by the Brazilian and the Ontario. The entire cargoes were slaughtered at the port of landing within the prescribed period of ten days, and all the animals inspected by Mr. Moore, the officer of the Privy Council, who reports that the disease was fully established in each case.

PLEURO-PNEUMONIA IN FRANCE.—Pleuro-pneumonia has appeared in the south-east of France. It is attributed to importation of cows from Italy.

SELLING DISEASED MEAT.—A Coventry butcher has been sentenced to two months imprisonment for exposing diseased meat for sale. It was his *sixth* offence.

CATTLE MARKET AT HULL.—Plans have been prepared by the Hull Corporation for the erection of an English cattle market on a scale which will give the town one of the largest markets in the kingdom. The actual site of the proposed market extends over about ten acres.

THE VETERINARIAN, APRIL 1, 1879.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

PIG TYPHOID, OR SWINE PLAGUE.

FEW diseases can claim so many titles as the affection which has for many years been well known as a fatal one among swine, under the various names of "hog cholera," "soldier," "purples," "red disease," "swine plague," &c.

Dr. Budd, some fourteen years ago, investigated the swine disease, and came to the conclusion that it most resembled enteric fever of man, and the term typhoid fever of swine has of late years been very generally adopted in this country to the exclusion of other names for the disease. Our colleague, Professor Axe, recently wrote in our pages on the subject of his investigations, and his conclusions as to the nature of the disease were similar to those which Dr. Budd arrived at. Dr. Klein, however, found that the disease of the pig differs in several important anatomical points from typhoid of man, and according to his views the malady is one proper to the pig, and may be correctly designated *pneumo-enteritis*. In the *Lancet* of March 15th the question of the proper name to be given to the disease is discussed, and we quote from the article the following remarks, which are very pertinent to the subject. The article is headed *Swine Plague*:

"Scarcely a day now passes in which we do not find a notice in the papers regarding outbreaks of 'typhoid fever' in swine in different parts of the country, and the peremptory slaughter of the diseased creatures. This publicity is due, chiefly, to a recent order of the Veterinary Department of the Privy Council, in which the disorder is recognised as a contagious and destructive malady, for the suppression of which sanitary measures are necessary. Not that it is at all a new disease. On the contrary, it appears to have been in existence for a very long time, though its individuality has been rather obscured by the multiplicity of names it has

received, and the other morbid conditions with which it has been confounded and mixed up. From the circumstance that the skin is frequently discoloured, it has been designated the 'red disease,' 'red soldier,' 'purples,' 'blue disease,' 'blue sickness;' but this discolouration is observed in other derangements of the pig, and is not constant even in this malady. It has also received the name of 'hog cholera' in America, and 'swine plague' there and on the continent of Europe. Until recently veterinary pathologists have classed it with the anthracic diseases, and it has been so described. In America it has also been known as the 'intestinal' or 'enteric fever of swine,' and since 1865—in which year it was investigated by Dr. Budd—it has been designated 'typhoid fever' in this country, and as such is alluded to in Privy Council orders. But there can be no doubt whatever that it presents but little resemblance, either clinically or pathologically, to typhoid fever in man, and the name is therefore not only inappropriate, but is dangerously misleading when its fatality and extreme degree of infectiousness are considered. Recent investigators have abundantly proved the erroneousness of Budd's designation, but the peculiar characteristics of the malady have proved an obstacle to its receiving a name sufficiently explicit to denote its nature. Klein names it 'pneumo-enteritis,' and other observers 'bronchial catarrh' and 'catarrhal pneumonia.' Admitting that it is a disease *sui generis*, yet if pushed to find its analogue in the list of specific fevers of man, we would be inclined to compare it with measles, with which it has more features in common, perhaps, than any other; and, indeed, by this name (*rougeole*) it has long been known in France.

"It is one of the most destructive diseases to which pigs are liable, and, for lack of a more distinctive popular title, it merits that of 'plague'—as a plague it truly is. As 'swine plague,' its serious character would be far better indicated than by the improper name of 'typhoid.'"

According to the different views of various observers we have as alternative terms to the one typhoid fever, which we allow to be in many points objectionable, *pneumo-enteritis*,

bronchial catarrh, catarrhal pneumonia, measles, and swine plague. Of these only the last two could be suggested as popular titles for the disorder, and neither of them is free from objectionable characters. *Measles*, of course, would be confounded with ordinary *measles*, which means *Cysticercus cellulosæ*; and the term *swine plague* would immediately lose the prefix, and be reported as "plague," and so the *plague*, which should be limited to one class of animal, might be interpreted to mean the plague belonging to another class. There is already a tendency to translate pleuropneumonia, and even foot-and-mouth disease, by the word *plague*, and occasionally some little alarm is caused by a report of another outbreak of "cattle plague," when one of the more common disease is intended.

Besides the above objections to the use of the word *plague* in application to any disease of animals excepting the veritable "cattle plague," there is another which seems to us still more serious. The *Lancet* of March 22nd contains a note to a letter written by Dr. Klein on "swine plague," and among the statements made is one to the effect that the disease of the pig has been communicated to the *rabbit and the sheep*, and its identity proved by again introducing the virus from these animals to the pig. If the swine plague is also a sheep plague and a rabbit plague, it may by-and-bye become a cattle plague; at any rate, the mere possibility of sheep and other animals being liable to the pig distemper is quite sufficient to show that the term *plague* is not the right one, perhaps is more objectionable than any of the other titles by which the disease of swine is known. What is required is a name which cannot be used without the name of the animal to which it is intended to apply, and of all the common terms which are in use *hog cholera*, although manifestly incorrect, has the advantage of necessitating the use of a name indicative of pig, inasmuch as 'cholera,' minus 'hog,' could not or would not be applied to any of the lower animals, while 'plague' would be naturally applicable to cattle, sheep, and swine.

WE extract the following from the *Daily News*:—Major-General Sir Frederick Fitzwygram, of Leigh Park, Hants, has accepted the cavalry command at the Aldershot Camp, and will enter upon his duties on the 18th April. Sir Frederick served for many years in India.

The *United Service Gazette*, in confirming the report, says that Sir Frederick, as Major-General commanding the cavalry brigade at Aldershot, and Inspector-General of cavalry in Great Britain, will relieve Lieutenant-General Wardlaw, C.B., on the 1st prox., and it adds that “very great reforms may now be looked forward to in our cavalry regiments, and at the cavalry depot.”

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

MONTHLY Council, Wednesday, March, 5th, 1879. Present, Colonel Kingscote, C.B., M.P., Trustee, in the chair.

VETERINARY COMMITTEE.

The *Hon. W. Egerton*, M.P. (Chairman), reported that the Committee had received the following report from the Royal Veterinary College, including the particulars of an outbreak of disease in a flock of ewes, the property of B. Moss, Esq., Arlington Hall, Essex.

In consequence of a destructive disease having shown itself among lambing-ewes in different parts of the country and several diseased animals having been forwarded to the College, as well as the carcasses of others, a special investigation of the matter was ordered to be made by the Principal, who has received the following report from Professor Axe:

“From communications which have reached the College, it would appear that a destructive disease prevails among ewes to a serious extent in several parts of the kingdom, the mortality from which cannot be less than 70 to 80 per cent. of the animals attacked, and, in some instances, as much as 30 to 40 per cent. of the entire flock. So far as I have been able to investigate the circumstances relating to the disorder, the following facts have been ascertained. The malady is confined to ewes, and attacks most frequently and severely the aged, and such as are the subjects of debilitating organic affections or constitutional weakness. It prevails especially in flocks whose diet during the winter months has consisted entirely, or nearly so, of grass, or turnips, or which have been otherwise sparingly fed. The Down and mixed Down breeds appear to be the most susceptible, as well as those ewes which bear twin lambs. It usually appears suddenly, about seven to fourteen days prior to parturition, or

shortly afterwards; and in those instances in which ewes are pregnant with twins, as many as 80 to 90 per cent. have been attacked. When following parturition it proves rapidly fatal.

The duration of the malady varies from twenty-four hours to three, four, or occasionally seven days, but the shorter periods are the more common. It is non-contagious. The presence of the sick, however, has in some instances appeared to excite abortion in the healthy ewes, and thus occasioned additional loss.

Symptoms.—The primary indications of ill-health consist in a separation of the sick from the healthy, a disinclination to feed, and a dull, lowering expression, attended with feeble movements. In this condition the animal continues only for a short time and other and more urgent symptoms quickly develop themselves. The gait now becomes very unsteady, the head is carried near the ground, the ears and eyelids droop, and the general expression is one of extreme prostration, being not unfrequently followed by complete paralysis. The constitutional disturbance is further marked by a considerable rise of internal temperature, the heart's action becomes quick and feeble, and the respirations hurried. Should the disease continue its course, nervous phenomena of a very characteristic type appear. The muscles of one or more of the limbs are feebly jerked towards the trunk. The eyes are fixed, and drawn deeply into their orbits, while at the same time the pupil is directed outwards. The head is either drawn directly backwards and supported in a rigid manner or it is thrown to the side, where it persistently rests as is seen in cows suffering from parturient apoplexy. The lips are turned upwards, or moved from side to side.

As the malady progresses all these symptoms become aggravated, and the wool readily leaves its follicles. In other cases, where parturition has taken place, symptoms of abdominal pain are manifested, owing to inflammatory infiltration of the uterus.

The animal moves round and round, and afterwards throws itself down, and turns its head again and again towards the flank. Pain is evinced on pressing the belly, and likewise in voiding the fæces or urine; there is always more or less straining and tumefaction of the vulva, with ejection of a thick red, and tenacious substance, consisting of blood, mucus, and the *débris* of the foetal membranes. Occasionally, besides the group of symptoms referred to, there is more or less discharge of a muco-purulent character from the eyes and nose, but I am disposed to regard this as accidental, and owing to exposure in the early period of the disease.

Examination after death.—The body is invariably emaciated, although in many instances a fair amount of fat is found in the region of the kidneys. Decomposition sets in early. The cavity of the belly sometimes contains a greater or less quantity of blood-stained fluid. The intestines are pale, and their walls attenuated. The mucous or lining membrane may or may not be reddened; in some instances it is much so, and at the same time swollen and

pulpy ; but in numerous cases it is free from any pathological alteration whatever. Similar changes to those last referred to are sometimes found in the fourth stomach, but the first, second, and third stomachs seldom show any alteration either in appearance or structure.

The liver is usually small in size, frequently pale in colour, soft in consistence, and granular in character. In some examples it is congested, red, and largely infiltrated with serosity, while in others it exhibits no perceptible alteration. The kidneys are small, soft in consistence, and easily broken down. In some cases they present a more or less congested state, but in other respects they are free from structural change. Only where the urine is retained for a long period, owing to muscular paralysis, is there any perceptible alteration in the bladder. In these instances the mucous layer is congested, thickened, and occasionally infiltrated with blood as the result of a rupture of its vessels.

When parturition has not taken place, the walls of the uterus are generally thin, pale, and flaccid ; but they present no perceptible indications of structural change. On the other hand in those cases in which parturition has been effected, either previously or subsequently to the attack, the uterus exhibits pathological changes of the most varied and destructive character. The outer or serous tunic of the organ is covered more or less with pseudo-membranous layers of fibrine, which in places become united to corresponding portions of other viscera, more commonly to the rumen or paunch. The uterus is moreover of an intensely red hue and void of its smooth and polished aspect. The walls of the viscus are not contracted. The cavity contains a large quantity of dark-red or chocolate-coloured matter, consisting of spoilt blood, mucous, epithelial and inflammatory elements and the disintegrated remains of foetal membranes. The mucous membrane is swollen and soaked with sanguineous fluid, or the tissue is ploughed up by blood extravasation. In this condition it is soft, pulpy, and easily broken down. In such a state of the mucous layer the underlying tissues are always more or less infiltrated with serosity, and opened out in every direction, giving to the organ a thickened and rigid character, and at the same time rendering it soft and lacerable in all its parts. In some instances the vessels are plugged with dark coagula, and portions of the organ are in a gangrenous condition. The vaginal passage contains materials of the same nature as those existing in the uterus, and the structures composing its walls participate to a greater or less extent in the uterine changes.

In nearly all cases the lungs exhibit a more or less congested condition. In some they are also uniformly œdematous ; and in others beset with hæmorrhagic patches or points. Pneumonic consolidation is occasionally present, as are also embolic softening and gangrene of smaller or larger areas of pulmonary tissue. The two last-named lesions are usually associated with extensive disease and disorganisation of the uterine walls.

In numerous examples the heart is flaccid and its tissue soft, but beyond these no changes of note are to be detected. When uterine complications result in blood contamination (septicæmia), blood blotches and petechiæ are invariably found beneath the lining membrane of the left cavities.

In the brain the chief lesions consist of engorgement of the large vessels at its base, general congestion of the coverings, œdema of the nerve tissue, and in some cases serous effusions into the sub-arachnoid spaces.

From a full consideration of all the facts relating to the malady in question, I have arrived at the conclusion that it is due to the debilitating influence of exposure, operating through a long and severe winter, on animals subjected to a defective and illiberal dietary system. This conclusion is based especially on the following observations :

1. That the older and more weakly ewes are most frequently its victims.

2. That all those animals which are constitutionally weak, or affected with organic disease, whereby the nutritive functions of the body are impaired, are the first to succumb to the malady.

3. That such of the ewes as are pregnant with twin lambs, and on whose system the greatest demand has consequently been made for the materials of the growth and life of the young, are most susceptible to the disease.

4. That the period at which the disorder occurs, viz. seven to fourteen days before parturition, marks the failure on the part of the system to sustain the organic activity which is then required to consummate foetal development and prepare for parturition.

5. That the outbreaks on which this conclusion is based prove that the dietary system was manifestly defective when considered in relation to the trying conditions of the present seasons.

6. That whenever the restorative system of treatment has been adopted the disease has been arrested.

In considering the influence of the present season in regard to this affection, it must be remembered that the mere outward exposure to cold and wet is by no means the only element of mischief. On grass pastures, as well as in the turnip fold, a great thickness of snow, has not unfrequently had to be removed by the sheep before food could be obtained, and in the former case this has necessitated long-continued exertion and a corresponding degree of fatigue. Moreover, every mouthful of food has been charged with an amount of moisture which must have contributed largely to render thin and watery, and otherwise to spoil and reduce the nutritive properties of the blood. The malady may be said to belong to that great group of disorders which annually produce such appalling waste in our flocks and herds, and consequently a paucity of home supply of meat. Recognising this, the principles to be studied are clearly those which belong to the art of hygiene. Recent experience has afforded abundant confirmation of this view of the causes of the malady.

The adoption of a strictly restorative system of treatment, involving a liberal and well-regulated diet, together with the administration of ferruginous tonics and saline alteratives, has been singularly effective in arresting the progress of the malady. It is well known that nothing tends so much to the embarrassment of the constitution, and the production of disease, as the injudicious changes and neglect which are usually permitted in the feeding of sheep; and more especially breeding ewes, which of all others demand the most careful attention. By far the greater number of fatal diseases to which ewes and lambs are liable are of a preventible nature, and their origin is due either to the quantity or quality of food, or to a bad system of management. It too frequently happens that stock ewes are made the scavengers of the farm, and but little regard is paid to their pregnant condition. Turnips that have been eaten off by other sheep, without any additional or more substantial fare, are not unfrequently considered by some persons to be quite sufficient to sustain the system of breeding sheep through the trying period of pregnancy, and this altogether regardless of the fact that the maturing of the foetus is being consummated during the coldest and otherwise the most unsalubrious season of the year. Practical experience has shown again and again, that in ordinary seasons the ewe flock may be sustained through the period of pregnancy on an exclusive grass or root diet; but while such experience serves to illustrate this fact, it by no means justifies an unqualified adoption of the system. Breed, condition of body, condition and quality of soil, temperature, and other considerations, should at all times be taken into account in dealing with the important questions of the food and health of animals.

With special reference to the outbreak of this disease in a flock of ewes, the property of B. Moss, Esq., Arlingdon Hall, Essex, it may be stated that the particular flock in question originally consisted of 145 ewes of the mixed Down breed. They were divided into two lots of 14 and 131 respectively. The former were old ewes, and the latter a mixed lot of various ages. During the winter the larger number were placed on upland pasture, while the smaller had given to them, in addition to grass, a small quantity of dry food.

The disease first appeared on the 1st February in the smaller lot, out of which two had died at the time of my visit. On the 12th two of the larger lot developed the disease, and others, to the number of eight, were subsequently attacked, and destroyed in consequence.

The adoption of the principles of treatment contained in the preceding part of this report was speedily attended with benefit; and I am informed that no fresh cases have occurred, and that the sheep are now much improved in their general health."

J. WORTLEY AXE,
Professor of Morbid Anatomy at the Royal
Veterinary College.

The following letters were received from the Lord President of the Council.

Veterinary Department, Privy Council Office,
44, Parliament Street, Westminster, S.W.,
13th February, 1879.

SIR,—I am directed to acknowledge the receipt of your letter on the 5th instant, addressed to the Lord President, submitting a resolution of the Royal Agricultural Society of England, having reference to the importation into this country of cattle from the United States of America, and, in reply, to forward a copy of an order of Council on this subject, passed by the Lords of the Council on the 10th inst.—I am, sir, your obedient servant,

(Signed) C. L. PEEL.

The Chairman of the Council, Royal Agricultural
Society of England, 12, Hanover Square, W.

Veterinary Department, Privy Council Office,
44, Parliament Street, Westminster, S. W.,
February 17th, 1879.

SIR,—I am directed by the Lord President to acknowledge the receipt of your letter of the 13th instant, and to state, in reply, that if a suitable quarantine station is provided at Portland, the application of your Society shall be taken into consideration by the Privy Council; but I am to add that should a quarantine station at Portland be opposed by the Lords of the Council, such station cannot be confined to animals from any one particular country.

I am further directed to state that, as at present advised, the Lord President proposes to fix the 19 of June as the day on which all animals from scheduled countries (for exhibition) must be in the quarantine station.—I am, Sir, your obedient servant,

(Signed) C. L. PEEL.

The Secretary, Royal Agricultural Society of England,
12, Hanover Street, London, W.

ROYAL COLLEGE OF VETERINARY SURGEONS.

SPECIAL MEETING OF COUNCIL, HELD MARCH 5TH, 1879.

Present—The President, Professors Brown and Pritchard, Messrs. Batt, Blakeway, Cartledge, Cartwright, Collins, Dray, Fleming, Greaves, Morgan, Proctor, Reynolds, P. Taylor, Geo. Williams, and the Secretary.

The *Secretary* read the notice convening the meeting.

The minutes of the Quarterly and Special meetings were read and confirmed.

Correspondence.

Letters were received from Professor Williams, Professor McCall, and Mr. Freeman, regretting their inability to attend the meeting.

A letter from Professor Simonds in reply to the letter sent by the Council sympathising with him in his recent domestic bereavement.

A letter from Professor Lieutard, Principal of the Veterinary College, New York, in which he desired to be presented with a copy of the Register for the Library of the College. It was accordingly sent.

A letter from Mr. A. Charles, Veterinary Surgeon, presenting to the Museum of the College an anatomical specimen of the penis of a whale. The only two other specimens of the kind were in the Museum of the Royal College of Surgeons.

A letter from Mr. Queenborough, of Boston, chemist, with which he sent the kidneys taken out of a fat bullock, three years old. One kidney weighed half an ounce, while the other weighed two pounds. Both were enveloped in an average covering of fat, and there was no appearance of the internal organisation being wrong.

A letter was also received from Mr. Harrison, of Hereford, veterinary surgeon, presenting to the College a unique specimen of the head of a calf for presentation to the College.

On the motion of *Mr. Dray*, seconded by *Mr. Taylor*, a vote of thanks was unanimously awarded to the donors for their presentations.

Mr. Fleming presented some stones passed by a dog both by the mouth and the rectum in twenty-four hours. They were rather curious both as regards their angularity and number. *Mr. Fleming* also presented a Roman horse-shoe which he had succeeded in obtaining from the curator of the York Museum. He said that the shoes he had already presented to the Museum were only casts. He also presented two old shoes which had been dug up at Hendon at a good depth below the surface, and they must be two or three centuries old from their shape. They were exceedingly curious and would tend to add to the history of farriery and to the interest of the Museum. He had also to state that *Mr. Petchley* had sent up the head of a foal from Norfolk. The specimen was rather rare.

On the motion by *Mr. Dray*, seconded by the *President*, a vote of thanks was accorded to *Mr. Fleming* for his presentations; and on the motion of *Mr. Fleming*, seconded by *Mr. Dray*, the thanks of the Council were unanimously voted to *Mr. Petchley*.

A letter was received from *Mr. Withers* tendering his resignation as Treasurer, in consequence of increasing private engagements, and expressing his thanks for the kindness and consideration that had been shown him during his fourteen years of office.

The *President* moved, and *Mr. Dray* seconded, that the resignation be accepted.

The motion was carried.

On the motion of the *President*, seconded by *Mr. Dray*, a vote of thanks was passed to *Mr. Withers* for his services.

Mr. Dray was unanimously elected Treasurer in room of Mr. Withers.

Mr. Dray in a few words returned thanks for the honour done him.

A letter was received from Messrs. Scott and Co., Bankers, Cavendish Square, stating that they had purchased £311 13s. 9d. Consols in the names of the three trustees, Messrs. Cartwright, Lowe, and Collins, and enclosing the broker's note and stock receipt for the same.

A letter was received from Messrs. Bayliss, Church Court Chambers, Old Jewry, enclosing a cheque for £104 6s. 8d., being a legacy from the estate of the late William Field, Esq., and which had been lodged in Messrs. Scott's Bank.

On the motion of *Mr. Dray*, seconded by *Mr. Cartwright*, a vote of thanks was directed to be sent to Mr. Field's executors.

A letter was received from Mr. J. Puxley, of Colchester, wishing to be informed by a certificate as to whether Mr. Charles Marking, of Tipperfield, Essex, was a member of the Royal College of Veterinary Surgeons, and enclosing the fee. A certificate had been sent to the effect that he was not a member.

Letters were received from Dr. Dunsmure, furnishing a report of the winter examination of the College, which took place on January 15th, in which he stated that Mr. Hunt, owing to indisposition, was unable to attend, and his place during the practical examination was supplied by Mr. Robertson, of Kelso. Out of the total number of thirteen students examined, four were rejected, and eight were admitted members of the College. One passed his minor examination, but none of them were entitled to honours. A balance sheet of the expenses and receipts was also enclosed.

A letter was received from Mr. Moore, Cow Street, Ludlow, Salop, wishing to be informed whether there would be a major examination under the old rules in Edinburgh in July next.

The *Secretary* stated that an answer was sent to the effect that there would be an examination in April and July next, and that it was required of candidates to comply with bye-law 34.

A letter was received from Mr. Ed. Davies, of Llangedwyn, Oswestry, in which he expressed his wish to go up in April next for examination without attending lectures; and, if he could not do so, asking if he could go up in July. He was furnished with an extract from bye-law 34.

A letter was received from Mr. George Taylor, Church Terrace, Cheadle, Staffordshire, wishing to be informed if he could be examined under the old rules, having entered the Royal Veterinary College in 1869, attended the session 1871-2, and left the College in consequence of family illness. He was informed that he was ineligible to come up under the old rules.

A letter was received from Dr. Favié acknowledging receipt of the register, saying he would send an order to London for pay-

ment of "the third examination," and considering that he had dispensed with the first two examinations.

He was informed that there could only be the omission of the first year in the two years' study required by the bye-laws of the College, and that if he desired the diploma he would have to attend for two years the lectures of some recognised Veterinary School, and pass the various examinations during that period.

Letters were received from three candidates for the diploma of the Royal College of Veterinary Surgeons holding the Highland and Agricultural Society's Certificate, and wishing to be informed if the agreement had been completed.

They were informed that the subject was still under the consideration of the Council.

A letter from Professor Vaughan was received, wishing to be informed whether a medical graduate from an American university whose diploma is recognised is entitled to the exemption named in bye-law 47. He was informed that a student would be exempt from the first year's course of lectures, provided his diploma was approved and recognised by the Council of the Royal College of Veterinary Surgeons.

A letter has been sent from Dr. Rice to the President, asking whether or not the diploma of the University of Vermont, United States, conferring upon him the degree of M.D., would be recognised by the College as competent for presenting himself at the next examination of the Examining Board for his second examination for the membership of the Royal College of Veterinary Surgeons.

The following letter was also received:—

" GAYFIELD HOUSE, EDINBURGH,
" *February 19th, 1879.*

" William Henry Coates,

" Secretary R.C.V.S., London.

" Sir,—In reply to your letter of the 18th date, I may write that my diploma is from the University of the State of Vermont, and that I entered the New Veterinary College at date of opening of the present Session *i.e.* in October.

" I am, etc.,

(Signed) " F. R. RICE."

The *President* said the question was whether the Council would acknowledged the medical degree from the University of Vermont. He believed that, as a general rule, the University Degrees conferred by the older or Eastern States were valuable; but in the newer or Western States they were of very little value.

Vermont was one of the older Northern States, and he believed the degree conferred by the University of Vermont was quite sufficient for their purpose. He wrote to Mr. Williams on the subject, and got an answer to the effect that he considered Dr. Rice to have scientific abilities above the ordinary run of medical men in this country; and that he was a very good physiologist

and one of the best anatomists he had ever met. He (Mr. Williams) had every proof that Dr. Rice not only held the diploma of Vermont University, but that he was a member of the most exclusive Medical Society in Boston, which, he understood, admitted none but those possessed of the highest professional qualifications, and that Dr. Rice intended to become a teacher of comparative anatomy or veterinary medicine when he returned to America. He (the President) begged to move that the diploma of Vermont be accepted as sufficient.

Mr. Dray seconded the motion.

Mr. Fleming thought it would be well to inquire in what estimation the diploma of the Vermont University was held by the medical profession in this country. The Universities in many of the States were numerous, and some of them below par; and of the University of Vermont he had no knowledge. He thought inquiry should be made of the Royal College of Surgeons or the Royal College of Physicians as to the value of the diploma in question. He did not wish it to be inferred that he cast any doubt upon the diploma, because Dr. Rice might think he was being subjected to some indignity; but Dr. Rice himself would see the force of it as a matter of precaution.

The *President* then moved that a Committee be appointed to consider the question of foreign medical diplomas under bye-law 47. The report of that Committee would no doubt hold good in future cases.

Mr. Reynolds seconded the motion, which was carried.

The Committee was duly appointed, the members being Messrs. Fleming and Collins, and Professor Pritchard.

A letter was received from Professor Walley, relative to a student from one of the veterinary schools who had been rejected twice under the old rules, and who now wished to join the Edinburgh Veterinary College, and present himself for his first examination under the new rule in April next. He was referred to bye-law 34, which provided that the student should give satisfactory proof of having attended the lectures and general instruction of the school at which he has been educated during the interval of his rejection. He was therefore not eligible to come up for his first examination.

A letter was received from Dr. Dunsmure stating that there would be a large number of students for examination, and proposing that the examinations in Scotland should commence on Monday, April 14, if possible.

The examinations were fixed for Scotland on the 14th of April, and for London on Monday the 31st of March.

The following letter from Professor Williams was read:

“THE NEW VETERINARY COLLEGE, GAYFIELD ;
“EDINBURGH, *March 4th*, 1879.

“To W. H. Coates, Esq.

“Dear Sir,—I am sorry that I cannot be present at the meeting, as I wanted particularly to draw the Council’s attention to bye-law 46, the meaning of which I think has been misconstrued.

“In order to satisfy myself I have taken a legal opinion upon it, which is as follows:—That according to bye-law 46, an examination is to be held if there be nine candidates, and that such a number may be made up of candidates for the first, second, or third divisions of the examination (for example, three for each division).

“That if the bye-law were intended to exclude any number below nine from any division of the examination, it ought to have been as follows:—‘No examination shall take place in the first, second, or third divisions of the examination unless there are at least nine candidates for examination in such division,’ which would mean that, although there might be twenty-four candidates for examination, namely, eight in each division, still no examination could be held—a matter of great hardship.

“I now beg to enclose a notice of motion that I think will meet the case, and which I will thank you to suspend in the Council-room.

“I remain, &c.,

“W. WILLIAMS.”

“Notice of Motion as to alteration of Bye-law 46, that Bye-law 46 shall read as follows :

“March 5th, 1879.

“No examination shall be held unless there be nine candidates for one division of the examination ; but if a Board be assembled, and there be a candidate or candidates for another division, the examiners for which being within reach, then a Board shall be constituted to examine such candidate or candidates.

“(Signed) W. WILLIAMS.”

The *President* gave notice that he intended to move the insertion of the word “each” in Bye-law 46 after the word “for,” *i.e.*, unless there were at least nine candidates for each examination.

A letter was received from Mr. Callow, of Horsham, Sussex, conveying his acknowledgment on being informed that he had obtained the first prize of the Royal Agricultural Society ; also a letter from Mr. Jenkins, of the Royal Agricultural Society, acknowledging receipt of the report of the examiners, of which the following is a copy :

“ROYAL AGRICULTURAL SOCIETY OF ENGLAND ;

“12, Hanover Square, London, *February 7th*, 1879.

“DEAR SIR,—I am instructed by the Council of the Society to return to you the enclosed copy of a report which they have received through you from the examiners appointed to test the qualifications of students competing for the Society's Veterinary Medals and Prizes, and to ask you to draw the attention of the Council of the Royal College to the opinions expressed by the examiners in reference to the regulations which apply to this examination, and to request that they will draw up for the consideration of the Council of this Society such a modified scheme as in their opinion will meet the objections which appear to exist against the scheme at present in force.

“Yours, etc.,

“W. H. Coates, Esq.,

“H. M. JENKINS, *Secretary.*”

“Sec., Royal College of Veterinary Surgeons.

The Fitzwygram Prizes.

Mr. D. Gresswell, of Louth ; Mr. Reynolds, of Liverpool ; Professor Voelcker, of the Royal Agricultural Society ; and Dr. Dunsmure, junr., were appointed examiners for these prizes.

Report of the Examination Marks' Committee.

The *President*, on the above report being presented, briefly explained its principles. The following is a copy :

The Committee appointed by the Council of the Royal College of Veterinary Surgeons beg to submit a Report which they have drawn up relative to the marks to be assigned at the examinations.

The Committee recommend the scheme as herewith annexed.

The Committee recommend that the payments made to examiners be by the hour, and at the rate of £1 1s. per hour, except for the Practical Examination, which should remain as heretofore.

The Committee recommend that numbers be substituted for names in the Examination sheets.

1. For a candidate to pass with “very great credit,” he must obtain marks within 5 per cent., or thereabouts, of maximum number.

2. To pass with “great credit,” he must obtain two-thirds of the maximum number.

3. To “pass” he must obtain one half the maximum number.

4. A candidate failing to obtain the minimum, fixed at one third of the maximum number of marks *in any one subject* is rejected.

Record of the Pass Examination.

Date

| No. | NAME. | MORBID ANATOMY. —— Max. . . 24 Min. . . 8 | PATHOLOGY AND PATHOLOGICAL TOXICOLOGY. —— Max. . . 24 Min. . . 8 | VETERINARY MEDICINE, SURGERY, AND THERAPEUTICS. | | | | | | | | TOTAL MARKS | RESULT. —— Very great credit 171 Great credit . . 135 Pass 90 |
|-----|-------|---|--|---|-------------------------------------|--|-------------------------------------|---------|--|--|--|----------------|---|
| | | | | HORSES. | | | | CATTLE. | | | | | |
| | | | | PRACTICAL. Max. . . 36 Min. . . 12 | ORAL. Max. . . 36 Min. . . 12 | PRACTICAL. Max. . . 30 Min. . . 10 | ORAL. Max. . . 30 Min. . . 10 | | | | | | |
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| 12. | | | | | | | | | | | | | |

Examiners.

Chairman.

Secretary.

The President said it might simplify matters if he were to put it in this light: First, "that it is desirable to adopt a system of marks instead of words; secondly, to discuss what number of marks were necessary to pass, good, very good, and reject; and, thirdly, to discuss the question of difference of value between different subjects of examination. He begged, therefore, to move that the Council adopt the system of marks instead of verbal notation.

Mr. Morgan seconded the motion, which was carried.

The President then moved, "That it is desirable to establish a difference in value in the different subjects of examination." If the Council agreed to this, they could discuss what value was to be assigned to the different subjects.

Mr. Greaves thought there ought to be a relative difference in the value of different subjects students were examined upon. *Mr. John Wilkinson* had always held to that opinion, and had pointed out to him (*Mr. Greaves*) many instances where young men were good anatomists but bad practitioners, and he considered it of the greatest importance that the students should be able to diagnose diseases. If the student was well up in practice, even if he was somewhat deficient in chemistry, botany, and other things, it would be much to his advantage. He thought the marks ought certainly to be more in his favour if he was found to be a useful, good practitioner. He had great pleasure in seconding the motion.

Professor Pritchard said, he was inclined to think that in the event of a pupil becoming acquainted with the fact that a little more importance would be attached to one subject compared with another, it would have a very demoralising effect on his mind. He proposed as an amendment that the marks be all equal.

Mr. Cartledge thought it unnecessary to make any alteration in the marks, because the theory that prevailed in the minds of the students that most importance was attached to the diseases of horses and the practical examination of them would still be maintained, whatever decision the Council may come to.

Professor Brown agreed with *Mr. Cartledge*, that the student well knew he would get off better if he passed a good examination in horse pathology than if he passed a good examination, say in botany. On that ground he did not see any necessity for intimating to the examiners those subjects which were different in value. They, knowing the circumstances, would arrange the matter among themselves. There was, however, an advantage in keeping the numbers as they were now, giving more value to those subjects that belonged to the Pass Examinations than to the two previous ones. He had worked the proposed scheme out in a variety of ways, and he quite approved of it. It seemed to him to be exceedingly well arranged.

Mr. Greaves said that a system of marks were being laid down for the guidance of the Examiners, which in some measure took

from them the discretionary power which they previously exercised. He maintained that if anything at all were done in the matter an authority ought to be given to them either to reject or pass a student more from that one table than from any other table.

Mr. Reynolds said that with regard to the first examination, he found the maximum and minimum in each subject was the same. It would probably meet *Mr. Pritchard's* idea if, in the second examination, the anatomy of cattle were placed on an equal footing with the anatomy of the horse and physiology and histology, and the number of marks would be equal to those required for the first examination: and to show that this Council appreciated the subjects in the third examination more highly than the two former examinations if the two subjects in the Pass Examination were put at a maximum of thirty-six, they should all be made equal. If Professor Pritchard accepted that as an interpretation of his motion, he would second it.

The President, in reply to Professor Pritchard remarked, that Professor Pritchard had said that in the third examination on the more important subjects, the examiners would be more stringent in their requirements. The more stringent they were, the less marks they would give, in all probability: therefore, on the easier subjects the student would get a fuller ratio of marks than if he were more stringently tested, and thus far there would be a disadvantage. The reason that cattle were put below horses was, that the diseases of cattle were less treated than those of horses. When a cow was ill, she was killed in an early stage of disease, because the flesh was valuable, but the horse was spared, because he was more valuable as a living animal.

The question was then put to the vote, when six voted for the amendment and eight against it. The original motion was, therefore, declared carried.

The President said that a compromise had been brought to his notice which he thought highly of. It was to retain the same number of marks for all the subjects, but that in certain subjects the qualifying number should be placed higher than in other subjects. Suppose the total number of marks in each standard for the Pass Examination was taken at twenty-four; for morbid anatomy it has been suggested to place the pass at twelve; but in practical surgery, both as regards cattle and horses, to place it at eighteen, or some such number, calling the attention of the students to the fact that that was a subject they must study, and in which they would require to be extra efficient. The idea was a good one, and on behalf of the Committee, he would be glad to adopt it. For the practical subjects, then, it would be twenty-four, "Very great credit"; twenty-one, "Great credit"; "Pass," eighteen; and "Reject," twelve. He moved that the Committee be requested to again meet to settle the question on the basis just laid down, and that the next examinations be conducted on that basis.

Mr. Collins seconded the motion, which was agreed to.

The President stated that a letter had been received from Mr. Jenkins as to the examination for the Royal Agricultural Society's prizes. What he (the President) would suggest, was that Mr. Jenkins should be written to with a proposal to recommend the Royal Agricultural Society to allow as Candidates all those who had passed with great credit on cattle, although they might not have passed with great credit on the other subjects. The limitation of the period after taking the diploma should be extended for two years.

Letters were received from Mr. Loch, stating that the agreement between the Royal College of Veterinary Surgeons and the Highland and Agricultural Society had been returned from Edinburgh.

It was duly signed and sealed on behalf of the Council, and returned to Mr. Loch.

Mr. Loch also enclosed the draft Supplemental Charter, as amended by the President.

The Draft Supplemental Charter was taken as read.

Professor Brown said he did not think any discussion was necessary upon the document, as it was purely technical and legal, and would give a complete settlement to the question at issue. He thought the Council could not do better than accede to it.

After some discussion as to Clause 3 of the Charter,

The President moved that Mr. Loch be instructed to apply for a Supplemental Charter, and that Clause 3 be included in it.

A form of diploma for the holders of certificates, granted by the Highland and Agricultural Society of Scotland, was submitted to the Council, and ordered to be sent to the Highland and Agricultural Society for approval.

Some conversation then ensued as to a site for the proposed new College; but it was decided, before taking any further steps, that a deputation should again wait upon the Duke of Richmond to ascertain exactly his views as to the probability of the Government giving a money grant towards the erection of new premises, or the use of some Government building.

The President said that he had omitted to call attention to a recommendation of the Marks' Committee, "That the payments made to Examiners be by the hour, and at the rate of £1 1s. per hour, except for the Practical Examination, which should remain as heretofore." The object of that was that if there was a small number over the twelve or the nine, if the Examiners got so much over the hour they would probably stay on an hour longer that evening and finish, instead of the Council being obliged to appoint a new evening for Examiners at £3 a-piece.

Professor Turner, and others, were agreeable to this arrangement.

On the motion of the President, seconded by Mr. Dray,

permission was granted to the Secretary to reside out of College, if he should wish to do so.

Mr. Fleming and *Mr. Greaves*, spoke in feeling terms of the bereavement *Mr. Coates* had sustained, and which necessitated a change of residence.

It was agreed, that the College premises be left in the charge of some responsible person during the night, and that the Secretary be in attendance at 10, Red Lion Square, for business from 10 a.m. to 4 p.m., except on Saturday, when it shall be from 10 a.m. to 2 p.m.

The Council then adjourned.

Notice of Motion for a new Bye-law to follow 32, of the present Bye-laws, by GEO. FLEMING, F.R.C.V.S. :—

“ March 5th, 1879.

“That in case any student, after having attended the prescribed course, is prevented by any cause—the fault not being his own—for presenting himself for the First or Second Examination, he shall, after having passed the particular Examination, be allowed to present himself for the one immediately following, by studying one term less than he would by the Bye-laws 31 and 32, provided the full number of terms shall have been complied with.”

CENTRAL VETERINARY MEDICAL SOCIETY.

SPECIAL MEETING WEDNESDAY *Feb. 12th*, 1879.

PROFESSOR AXE in the chair.

The Secretary read the minutes of the last meeting which were confirmed. He afterwards exhibited a specimen of induration of the mammary gland which had been brought by *Mr. Shaw*; he also called attention to the case of a rat which appeared to have suffered from scrofula, as both kidneys were much enlarged as was also the spleen; the abdominal viscera also presented a grapy condition. He thought the science of comparative pathology might be considerably enriched by the study of morbid changes as they occur in such animals as the rat. Some time ago he removed from the liver of one of these creatures a circular entozoon having at one spot about twenty little hooklets. It measured over an inch in length.

Mr. Broad said he once found a similar entozoon in the liver of a mouse.

Professor Axe said from a casual examination he had made of the diseased parts, the pathological characters would seem to favour the view taken by the Secretary that the morbid growth in the several organs was tuberculous. A microscopic examination of the structure would enable him to speak more definitely on the point, and he proposed to examine the parts on the first opportunity.

The Secretary said he had received a letter from Mr. Fleming expressing his regret at being unable to attend the meeting, and also a letter from Professor Walley to the same effect. Professor Walley also regretted that, in dealing with the question of "garget," Mr. Smee had not recognised in a becoming manner the researches of veterinary surgeons, and likewise, that Mr. Power had not sought their assistance, as they might have given him valuable aid in his sanitary researches at Kilburn.

Professor Axe then addressed the meeting on "Garget in relation to Diphtheria." He said it will be in the remembrance of this Society that at a recent meeting of the Pathological Society of London, a communication was read from Mr. Power by Dr. Buchanan on certain observed relations between diphtheria and milk, and that Mr. Smee also read a paper on the same occasion upon garget in reference to the cow. Those two papers have been brought to the front by our medical and sanitary journals, and they have been largely discussed by the daily press. The conclusions to which they point have the highest interest for us, in their sanitary as well as in their pathological connections; and the general importance of the questions involved commends itself to our most serious consideration. I may premise my remarks by saying that in the spring of last year, an epidemic of diphtheria fell somewhat heavily on certain parts of the districts of Hampstead and Marylebone, and that in consequence the Local Government Board was communicated with, and Mr. W. H. Power, a gentleman of the highest eminence in sanitary science, was deputed to inquire into the circumstances relating to the outbreak. It would appear from the weekly returns of the Registrar General, that diphtheria prevailed to a greater or less extent throughout the metropolis both at the time, and before, and after the special outbreak referred to. In pursuing his enquiry, Mr. Power found that the highest incidence of the malady was reached in the parishes of Kilburn and St. John's Wood, within a circle of half a mile radius, having its centre in the Abbey Road. Moreover, the outlying parts of this circle furnished an excess over the incidence of the disease throughout the metropolis generally. It was further observed that the more intense incidence of the affection was not only circumscribed in area, but that the special cause whatever it might be, was operative only during a very limited time. In dealing with the personal relations of those first attacked in each household it was found that in only a few instances had there been any direct exposure to infection from persons having throat illness. The great prevalence of the disease, therefore, in the circumscribed area could not be accounted for on the ground of personal intercourse, and the cause was consequently sought for elsewhere. The possible contamination of water was disposed of by the fact, that not only were the invaded houses but likewise a very large district in which diphtheria did not prevail, or but in a very small degree, supplied from the West Middlesex Company, whose water is

pronounced to be as good as any in London. In dealing with the question of public sewers and private drains, it soon became obvious that in the infected area there were present in all their force, the precise conditions known to favour the dissemination of disease. Indeed, sanitary science could hardly point to a more flagrant example of the subversion of its principles than which the specially diseased areas presented. On this point, Mr. Power remarks that under conditions of existing public sewage and private drainage, the area cannot have failed to have been repeatedly if not continually exposed to sewer and drain nuisances, for the liability of the main sewers to stangulation at their outfall under exceptional rainfall (such as prevailed prior to the outbreak) must have frequently conduced to extensive backing up of sewage, and penning up of foul air within the ill-ventilated sewers, and hence to forcible expulsion of the pent up sewer air by the way of unventilated house drains, and inefficiently trapped orifices, into the dwellings of the district. To put it plainly, the outbreak was one of a well-defined and localized character, and corresponded in extent to the area of defective drainage. Indeed, *prima facie*, there was a pronounced relationship between the unsanitary conditions and the event both in reference to time and space. The connection of the outbreak, to the supply of milk, was next considered. It appears that in consequence of representations made to Mr. Power by Dr. Morton, special attention was directed to two sources, from which milk was largely supplied to the infected district. One being a dairy farm at "Muswell Hill," and the other some sheds in the parish of Kilburn. Both establishments are in the hands of one proprietor, but only in regard to cows, and cow food was there any community of circumstances. "As regards employès, general administration, and milk science, they were wholly distinct, the one from the other." An account of the households supplied from the sources referred to was furnished to Mr. Power, and a strict inquiry was set on foot for cases of throat illness, over the lines through which the milk was distributed, and a very large percentage of cases was found to have occurred in houses supplied by it; but it is not stated whether Mr. Power pursued the same minute system of inquiry in regard to the distribution of milk from other dairies, nor does it appear whether bread and other articles of food, which must have been largely exposed to sewer air were considered in their relations to the infected households. That to the milk, and not to the sanitary defects of the locality the outbreak was due, Mr. Power's figures appear to prove most conclusively; but before they can be regarded as reliable it must be shown that Mr. Power's inquiry dealt with the milk of all retailers alike, that he did not make house-to-house visitation in regard to the Muswell Hill and Kilburn milk, and that he accepted the medical officers report alone, on account of houses supplied from other sources. Cases "so mild that their nature was rather inferred from their relation to other cases than from their own

symptoms " are not such as would reach the medical officers, but they have been taken account of by Mr. Power, and would no doubt swell the numbers, as against the Kilburn and Muswell Hill milk, to formidable proportions. As to the means whereby the milk became infected, no definite conclusion seems to have been arrived at. The water in use at Muswell Hill, while possibly exposed to foul soakage, was in general use by the family at the farm, who continued in good health throughout the epidemic, although they used besides the rejected milk. The Kilburn water was derived from the West Middlesex Company, and for reasons before stated, is acquitted of having any concern whatever with the outbreak. The sanitary condition of the premises, the general conduct of the business, and the manipulation of the milk and dairy utensils, reveal nothing suggestive of means whereby specific infection could have been brought about. At no time has diphtheria been known to exist in any member of the two households concerned, although both young and old have drunk largely of both milk and water, and moreover, I am informed on the best authority, that in no instance has diphtheria existed in the households of the several retailers who dealt out the milk, although, in some instances, they comprise large families of young children who partook of it daily in considerable quantities. In regard to the cows, I have had several interviews with the veterinary surgeon under whose medical care they are placed, and he assures me that at no time during the first six months of the year was any one of them the subject of garget, or any febrile or other disease whatever likely to contaminate milk. Indeed, throughout the whole period during which diphtheria prevailed, the two herds were in the most healthy condition. Whatever explanation, therefore, be sanctioned as to the way in which the epidemic originated, these facts cannot be disregarded so long as milk is held to be in question. "As to health of cows," says Mr. Power, "it is affirmed that at neither place has serious illness occurred; but this affirmation does not exclude occurrence of cold or other minor ailment among cows." From this it would seem that the entire responsibility is centred in that common condition we term "cold," or in some other undefined minor affection, which may or may not have had existence. It is hardly necessary for me to urge the utter absence of data, by which any possible relationship can be shown to exist between diphtheria and cold; nor need I dwell on the overwhelming evidence which we daily experience to the contrary, and with which all are familiar. I now pass on to notice some observations of Messrs. Power and Smee, contained in papers read before the Pathological Society of London. In reviewing the history of milk epidemics, Mr. Power says, "In many instances in which a relation has been traced between milk distribution and enteric fever, there is no doubt of the disease being due to the dissemination of milk contaminated by impure water or air. There are other examples, when such introduction

of water or air has been but obscurely made out, whilst there remains a third class, when the intervention of injected air or water has seemed unlikely, and where the readiest explanation of the outbreak would be afforded if milk apart from air or water could be regarded as the source of the disease." In other words, the latter instances could best be explained by regarding the cow not merely as an incubator of the germs of disease peculiar to her, but as a real factor, or generator also, of those which only take effect in the human subject, as in typhoid, scarlatina, and the like. In the particular outbreak of disease in question, this assumption has been carried to its highest and most dangerous altitude; for dangerous it must be to brand a great source of food supply with malignant properties on evidence which is not only wholly of a negative character, but which is also of the most remote description. To accept the view suggested by Mr. Power, adopted by Mr. Smee, and so hastily acted upon by the Pathological Society, necessitates in a very great measure the abandonment of the germ-theory of disease and the acceptance of the doctrine of spontaneous generation. But before such a sweeping innovation can be entertained it must be clearly shown that the failures so repeatedly met with, in tracing out the sources of contamination, are not due to a deficiency or misinterpretation of facts and phenomena. Moreover, it is most likely that had Messrs. Power and Smee been better acquainted with comparative pathology, or sought to be informed by those who have made cattle diseases their special study, both chemically and experimentally, they would not have troubled the Pathological Society with a hypothesis that admits of the clearest refutation.

Passing to the question of "garget," I need not trouble you with any details as to the pathology of the disease as it presents itself to us in an ordinary way, as I am perfectly sure that all of you are fully acquainted with it; Mr. Smee's assertion to the contrary notwithstanding. As, however, reference has been made by that gentleman to a *specific* form of "garget," it will be interesting to refer to a recent outbreak of this type of the malady, as illustrating the entire absence of etiological and indeed pathological relations also, between it and human diphtheria. The facts are these. In January last, "garget" appeared in a herd of eighty cows, forming part of a large London dairy. As in others of its kind, stale cows were every now and again being removed, while fresh "in calvers" were at the same time imported. During eight weeks no less than twenty of the herd became affected with this form of mammitis, and several of them so acutely, that it was considered advisable to destroy them. Neither age nor condition conferred immunity, and pregnant cows as well as stale milkers, and also those recently calved were alike attacked. Cows recently imported in a perfectly healthy condition became affected in from three to five days after their arrival in the shed, thus fixing the incubative period.

A strict inquiry was instituted as to the system of milking, feeding, and general management, as well as into the sanitary condition of the premises. The operation of milking was carefully watched, and strictly performed; every care was likewise exercised to guard against the ordinary known causes of garget, such as mechanical injury, exposure, gastric disturbance, &c., but without producing any abatement in the spread of the disease. The food was changed more or less completely, and the general arrangement rendered as complete as could be wished for, but with no good result. The sanitary condition of the sheds was as good as could be desired, and everything relating to health seemed to be as complete as the resources of a London dairy will allow. The progress of the disease was singularly rapid, and generally rendered one or more of the glands useless as milk-forming organs, and in several instances completely disorganised the whole. The initial symptoms of the disease were essentially systemic, and consisted in rigors, more or less severe, a staring coat, general dulness, and an impaired appetite. The internal temperature was exalted from two to five degrees, and in some instances this was associated with a brief attack of diarrhoea. The pulse was increased in frequency and in fulness, and the general condition of the body denoted a febrile state. The secretion of milk was at first simply diminished without having undergone any perceptible alteration in its physical properties. Soon, however, the mammary gland became hot and tumid, and the milk watery, and laden with caseous flocculi. In a short time the gland became enlarged, tense, and painful to the touch, and masses of caseine and purulent matter formed the bulk of what could be obtained from it. Purulent infiltration of the diseased part quickly followed, and abscesses varying in size and number in different cases were developed in the structure of the organ. In some instances pyæmic symptoms supervened in the local change and necessitated the animal being destroyed. The gland-structure was primarily involved. I mention this because in an article recently published in the *Veterinary Journal*, describing several outbreaks of a similar nature which appeared on the Continent, it is remarked that the teats became first diseased, and that the malady extended from them in the direction of the ramifications of the lactiferous sinuses and ducts. That this form of "garget" is of a specific nature seems to me in the highest degree probable, but that it has no etiological relations with diphtheria is abundantly attested by the fact that although for some time the chief bulk of the milk of this dairy must have been contaminated with that from the diseased animals, the district over which it was distributed continued as free from diphtheria as any other part of the metropolis. If, therefore, this be the specific form of garget on which Mr. Smee has laid so much stress, and to which, by implication, he has referred such dangerous properties, it is satis-

factory to know that we are able to place so important a matter beyond the pale of doubt.

It may not be pathologically precise to say that like always begets like either in an anatomical or chemical sense where disease is transmitted from the lower animals to man, or from man to the lower animals, and this for reasons that will be found in the diversity of structure and function, food and habits, and mode of life. But there is belonging to all these interchangeable disorders as they exist in man and beasts, common characters and features which bespeak their relationship. Mr. Power points out that already we know of several diseases in the cow capable of infecting the human subject, and he cites the relations of vaccinia to human smallpox, of bestial to human tuberculosis and anthrax fever in animals to that of man, &c., all of which carry with them from one creature to the other the typical features of the group to which they belong. If this be so, then is it not to bovine diphtheria that we should look for any etiological relations that may exist between the cow and human diphtheria?

Considering, however, the utter disregard with which comparative pathology has been viewed in this kingdom, it is not too much to assume that bovine diphtheria, like many other animal diseases, is not yet known to human pathologists. That the milk of cows affected with this disease is not capable of originating diphtheria in man is shown by the facts I am about to relate. In January last an entire herd of forty milch cows became more or less affected with this malady. Ten of them suffered very severely, one died, and one was destroyed when in a state of collapse. The symptoms exhibited by them varied somewhat according to the intensity of the attack. The more severe cases were ushered in with rigors and diarrhœa; food was refused, the animals became dull and dejected, and the internal temperature was increased, in some instances 3, 4, or 5 degrees; the pulse was quick, and the respiration somewhat hurried. This was followed by great prostration, cold extremities, and a harsh, croupy cough. As the disease progressed the cough became more and more painful, and the breathing embarrassed. Foamy saliva fell from the mouth, the throat became enlarged, the movements unsteady, and the hoof tympanitic. Dulness increased as the disease went on and culminated in coma. In the worst cases death was brought about by asphyxia. Some of the animals exhibited a slight cough, with bronchial catarrh and some small degree of fever. Such cases which were in the majority recovered in from three to five days. I regret to say that I had not an opportunity of making a *post-mortem* examination, but the gentleman in attendance kindly forwarded to me the larynx of the cow that was destroyed, which I have much pleasure in laying before you.

When first removed the false membrane which is now seen to cover its mucous surface was much thicker than it now appears,

and more so in some parts than in others. When portions of it were removed by the forceps, which was readily done, the mucous layer beneath was found to be swollen, as was also the submucous tissue, and there was besides a general hyperæmic condition of the whole. The specimen before you is by no means an isolated one of the kind. Several such occurring in calves have been forwarded to me at different times from various parts of the country. Here is one of them, exhibiting extensive diphtheritic deposit on the mucous layer, as well as inflammatory infiltration and necrosis of it and the submucous tissue. I am not aware that attention has hitherto been called to diphtheria as occurring in bovine animals, and as yet nothing has been done to work out its pathological details. The great interest which attaches to this outbreak as bearing on the question at issue, is centred in the fact that the milk from the majority of these cows was drunk by a large number of persons, and in no single instance has it produced the slightest ill effects. Whether the milk referred to by Mr. Power was or was not the medium by which the contagion was conveyed over the infected area is purely a sanitary question, and cannot be dealt with here; but that the disorder known as "garget," either in its common or specific form, has any relations whatever with diphtheria cannot, I think, be sustained in the face of the evidence I have laid before you. I cannot close these remarks without expressing my deep regret that members of the sister profession should pay so little regard to the teachings of comparative pathology; and it is still more to be lamented that those who aspire to authority, and walk in the ways of science, should deign to disparage the labours of a kindred profession. To say that garget "is not much known to veterinary surgeons," is to proclaim an unpardonable want of knowledge of veterinary literature, and a culpable indifference to real authority. It is manifest that without the aid of comparative pathology (State) medicine must continue to be a comparative failure, and the science of medicine as a whole weak and defective. The case before us has much interest for the veterinary profession, and points in a forcible manner to the necessity for watchfulness on our part over all matters relating to sanitary science in which animal diseases are concerned.

Mr. Moore said they were very much indebted to Professor *Axe* for his defence of the profession in regard to the unjust accusation which had been made against it. It was clear that those who had accused veterinary surgeons of knowing nothing about garget had not a great knowledge of veterinary literature. As the liver used to be the seat to which all diseases used to be referred, so milk at the present time is looked upon as the source of all infectious diseases. Why this should be so he could not understand. He had known calves to suck cows affected with garget without suffering in any way from the effect of the milk. In mammitis arising from contagious eczema it was otherwise. He had seen cattle suffering from throat disease, the

real nature of which he was not precisely acquainted with, as an opportunity had not occurred for examining them after death. He had likewise seen horses affected in the same way, when they were unable to swallow anything for several days, but they usually yielded to treatment.

Mr. Fraser said he must give himself the pleasure of saying one word. His experience of the medical profession was that if they asked any information from their veterinary brethren they were apt to do it in a patronising way, and to receive the statements with something like qualification, as though they thought the profession incompetent to form a judgment on the facts they observed, or of building up any theory. When the subject was brought before them he confessed the impression made on his mind was one of surprise. He could not understand how any medical man acquainted with the rudiments of medical science could suppose there was any connection between mammitis and diphtheria. He spoke from his experience, and he had seen a considerable amount of mammitis. And yet he could not remember it to have presented itself in a form that could be called epizootic. In his neighbourhood there was an outbreak of diphtheria, and in some stables where he attended mammitis existed. When he returned home he should endeavour with considerable interest to trace any connection between the two. There was just one medical man in the town in which he resided with whom he could freely converse on the matter; but, for the most part, medical men gave the cold shoulder to their veterinary brethren. He could honestly say that he had that night received a great deal of information from the President, and he was quite sure that the papers read in that room must be very instructive to those who had the opportunity of hearing them.

Mr. Moore was surprised to know that bad sewerage prevailed in St. John's Wood.

Mr. Shaw said they were very highly indebted to their President for his able address. He would propose that the meeting be adjourned, so that the discussion might be fully entered upon on another occasion. He had seen several cases of garget, but in those he had seen there had been very little milk at all, and the cow-keepers mostly milked what dregs there were on to the ground and put a calf on the animal on purpose to draw it all away.

Mr. Hancock seconded Mr. Shaw's proposition for an adjournment, thinking it probable that some Fellows not in attendance would like to say something upon the subject.

Professor Axe said he had no desire to prolong the discussion, but he thought there was a large quantity of useful information to be acquired by so doing. Some points had occurred to his mind, and if the adjournment were decided on, he would take the opportunity of introducing to the Society sections of diseased and healthy glands.

On the vote being taken, it was decided to adjourn the subject to the next meeting.

Mr. John Gerrard, of Romford, Essex, was proposed as a Fellow.

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

THE annual meeting and dinner of this Association was held at the Blackfriars' Hotel, Manchester, on Wednesday, 26th of February, 1879, W. Dacre, Esq., president, in the chair, the following gentlemen being present:—Professor Williams, New Veterinary College, Edinburgh; T. A. Dollar, London; Messrs. Greaves, Peter Taylor, Tom Taylor, John Lawson, W. A. Taylor, T. Hopkin, E. Faulkner, A. Lawson, J. B. Wolstenholme, and J. O. Martin, of Manchester; J. Welsby, Liverpool; J. B. Taylor, Ashton; H. Furgusson, Warrington; E. Woolner and C. D. Ashworth, Heywood; W. Whittle, of Mosley; M. E. Naylor, Wakefield; W. G. Schofield, Pontefract; H. J. Cartwright, Wolverhampton; A. Darwell, Northwich; J. Bunnell, Oldham; Peter Walker and Parlam Walker, Bradford; and S. Locke, the secretary.

Letters of excuse were received from Professor Pritchard, Professor McCall, Professor Walley, G. Fleming, D. Hutcheon, M. J. Harpley, S. F. Fallding, W. Broughton, J. Cuthburt, J. Geirard, J. M. Axe, R. H. Ringe, 5th Dragoon Guards, and many others.

The *President*, in delivering his inaugural address, said,—Gentlemen, You are doubtless aware that the delivery of inaugural addresses is becoming somewhat unfashionable, but I am sure you would not like the meeting of this day to pass over without some formal recognition. At the same time, I have no intention to detain you long from the social pleasures that await you above-stairs, and I propose (digressing as little as possible) to confine my remarks to the past work and future prospects of veterinary medical societies at large, and the Lancashire Association in particular.

As you already know, gentlemen, we have just passed through one of the most eventful periods in the history of our profession, and at last get a glimpse of the silver lining of the dark cloud that has so long cast a shadow over the path of professional progress. Imperfectly acquainted as I am with the political aspects of the profession, I cannot speak with any great confidence or authority on this subject; and I beg you will correct me if an error should creep into the few remarks I have to make. It will be in the memory of many members that up to the last two years the political influence of veterinary medical societies was nil, and, as a matter of fact, the provincial members of the profession were

unrepresented in our parliament. Two changes took place in the Council Chamber, and the only new blood infused into this semi-fossilised body was the access of a metropolitan practitioner, on whose lips the word provincial was a sneer; or the election of an army veterinary surgeon, who, from his position in life, was not acquainted with the requirements of the general practitioner, nor capable of representing him at the Council Board.

Professor Huxley has said "that the heads of colleges have not the reputation of being the most mobile of persons," but at last the authorities in London gave us what in justice we ought to have had sooner, viz., the vote by proxy, and to show you how eagerly the members of veterinary societies grasp with a firm hand any means of advancement that offers, I have but to refer to the recorded triumph of the first election committees.

I cannot dismiss subjects of a political character without at least alluding to an accomplished fact, having a most important bearing on the future welfare of the profession, viz., the discontinuance of the examination of the Highland Society, and the amalgamation of the London and Scotch schools. It is but a year ago that this "consummation so devoutly to be wished" seemed as far off as ever, and the negotiations towards the removal of this stumbling-block in the path of progress seemed to be brought to a standstill. At this unfortunate juncture of affairs there stepped into the widening track a Lancashire man—a member of this Society—who, by his diplomatic talent, his knowledge of the position, and the very able and conclusive argument he brought to bear upon the subject, surmounted all difficulties, and finally was instrumental in bridging over what at one time seemed an impossible gulf. The work of this gentleman (to whom we certainly owe our most sincere thanks) was not accomplished without drawing down upon him the sneers of those who, entirely mistaking the motive by which he was actuated, accused him of having, by his conduct in the past, been an obstruction to the very measure that without his influence might not yet have been brought to so happy a termination. Having thus advanced so far, let us hope that the next important step may be towards the introduction of a penal clause into our Charter, and let that clause be so passed that it may be subject to none of those evasions of the law by which such clauses are so often rendered inoperative. The formal appointment by the local authorities of veterinary inspectors of districts is a tardy step towards the recognition of the public utility of the profession, and may lead to the organisation of a veterinary sanitary service as complete as that so long and ably advocated by our friend, Mr. George Fleming.

And now, gentlemen, let me turn to topics more congenial to my mind—the social and scientific work of veterinary medical societies. I am sure that, with myself, you can look back with unmingled pleasure to the many friends you have made and the many kindnesses you have received at the hands of those who,

but for the social influence of these associations, would have been strangers to you, or might even have been at enmity with you.

Although the meetings of these societies should not be used for the ventilation of petty grievances or matters of a personal character, I am of opinion that they have been, and in the future will be, legitimately useful as arbitrators in cases of breaches of etiquette, &c. They should be regarded as a neutral ground on which, without fear of partiality, explanations might be given and received, and I believe that upon investigation the missing link would be found, joining once more the aggrieved members in the bonds of friendship and good-will.

And now, gentlemen, in conclusion let me say a few words as to the real functions of veterinary medical societies. It was formerly the fashion in this and indeed in other societies for the subject of the discussions to be brought forward in the shape of a long essay, rarely containing what I might say new matter, and seldom followed by an interesting or useful discussion, but we must remember that the production of fresh knowledge is an absorbing and difficult task, and beyond the power of the man distracted by the harassing demands of a private practice. It is, however, a comparatively easy matter for the ordinary practitioner to note any peculiar symptom or chain of symptoms; any pathological condition or *post-mortem* appearances, or the therapeutical action of any drug he may have been using, and it is the result of such observations, condensed into the form of a short practical paper, from which we have always elicited the most lively, useful, and intellectual discussions.

It must not be supposed from what I have said that I depreciate entirely the reading of papers of a more important character, and especially when they are written in the style of those recently read by Mr. Greaves and Mr. Gerrard, and Professors Williams, Walley, and Pritchard; and now, while on this subject, I don't think it will be a healthy thing for this Society or any parallel one to rely upon extraneous aid too frequently, and our feeling of self-respect should teach us that we have abundance of talent among ourselves to carry on the scientific business of the Society. I therefore invite you, one and all, to support the officers you have elected, and make their task an easy one by throwing aside all apathy and diffidence by coming forward when required to contribute to the success of our quarterly meeting and the usefulness of the Society. And now, gentlemen, in conclusion let me return my sincere thanks for the honour you have conferred upon me, and let me assure you that as far as my small ability enables me, I shall show my appreciation of your confidence, and with your assistance uphold the dignity, usefulness, and wellbeing of the Lancashire Veterinary Medical Association.

Mr. T. Taylor proposed for membership of this Association *Mr. T. A. Dollar*, of London, seconded by *Mr. P. Taylor*. Carried unanimously.

Mr. T. Greaves proposed *Mr. F. Dun*, of London, seconded by *Mr. T. Hopkin*—carried unanimously.

Mr. S. Locke nominated for membership *Mr. Henry Thompson*, V.S., Aspatria, Carlisle.

Mr. E. Faulkner nominated *Mr. J. O. Martin*, V.S., Manchester.

Mr. A. Lawson nominated *Mr. J. B. Wolstenholme*, V.S., Manchester.

Mr. T. Taylor proposed *Mr. F. H. Ridler*, The Mall, Notting Hill, London.

Mr. Peter Taylor proposed that *W. Whittle, Esq.*, of Mosley, be nominated to represent this Association in the Council of the Royal College of Veterinary Surgeons, seconded by *Mr. T. Greaves*, and carried unanimously.

Messrs. *W. A. Taylor*, *E. Faulkner*, *A. Lawson*, and *T. Hopkin* were duly elected an Electioneering Committee to forward the return of the above candidate.

The *Chairman* then remarked, before adjourning to dinner,—that he would, with *Professor Williams'* permission, ask him to give them his opinion as to the disease that the American cattle were suffering from, said to be pleuro-pneumonia. He understood that *Professor Williams* had had the opportunity of examining and making *post-mortem* examinations of some of the diseased cattle which arrived in Liverpool from America, per the "Ontario."

Professor Williams (who was received with applause) said he had seen over 100 of the cattle slaughtered, and examined nearly all the diseased ones. In a few there were lung consolidation and pleural exudations, and taking these lungs by themselves one would, he thought, be justified in concluding the disease to be pleuro-pneumonia. In three lungs, however, there were certain differences from what he was in the habit of seeing in the lungs of cattle killed for pleuro-pneumonia in this country. The signs of inflammation were too acute, and a very acute and red pleural inflammation extended far beyond the lung consolidation.

In other cases it was found that there were abscesses in the lungs, and in some cavities containing the débris of broken-down lung tissue and blood clots; appearances almost identical with what he had seen in the lungs of foreign horses after a rough passage even from Hamburgh to Leith. In others there was no lung consolidation, but pure and very acute pleurisy, and in some, in its first stage, more redness without exudation.

Then the cough of the living animals differed from that of pleuro-pneumonia contagiosa, being much more painful and pleurai. The cattle had undoubtedly been subjected to some severe cause or causes of chest disease, and taking the whole circumstances and *post-mortem* appearances into consideration, he would hesitate very much before giving an opinion that the disease was identical with contagious pleuro-pneumonia. At

present he was much rather inclined to think that the disease resembled what he had often witnessed, viz., sporadic pleuro-pneumonia arising from exposure, or even from traumatic causes, such as penetration of the lung by a foreign body. He had also frequently seen pleuro-pneumonia with well-marked pleural adhesions after an accidental introduction of food or medicine into the trachea.

The members and guests afterwards sat down to an excellent dinner, at which all the patriotic and other usual toasts were ably proposed and responded to, and a very enjoyable evening was spent.

SAM. LOCKE,
Hon. Sec.

NORTH OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

A meeting called by Mr. D. Dudgeon to consider the advisability of re-establishing the North of England Veterinary Medical Association, was held at the Douglas Hotel Newcastle on Tyne on Friday March 14th.

The following gentlemen were present:—Messrs. H. Hunter, A. Hunter, G. Elpstick, Newcastle on Tyne; W. J. Mulvey, Bishop Auckland; W. Anderson, Hexham; W. Wheatley, South Shields; J. Malcolm, South Hetton; A. L. Butters, D. Dudgeon, and G. R. Dudgeon, Sunderland.

A letter of excuse was read from Mr. D. Macgregor Bedlington.

Mr. H. Hunter was voted to the chair. After hearing the remarks of several gentlemen. It was resolved on the motion of Mr. D. Dudgeon, seconded by Mr. Elpstick. "That the meetings of the North of England Veterinary Medical Association should be resumed on the basis of the old Society."

The meeting then proceeded to the election of office bearers for the ensuing year. Mr. D. Dudgeon was elected President; Mr. W. J. Mulvey and Mr. H. Hunter, Vice-Presidents, and Mr. G. R. Dudgeon Secretary and Treasurer.

It was agreed that the meetings should be held quarterly, the first to be early in May.

G. R. DUDGEON,
Hon. Secretary.

THE SCOTTISH METROPOLITAN VETERINARY MEDICAL ASSOCIATION.

THE annual general meeting of this Association was held in the London Hotel, Edinburgh, on the 12th February. The following gentlemen were present:—Professors Walley and Baird;

Messrs. Robertson (Kelso), Cunningham (Slateford) Balfour, (Kirkcaldy), Balfour (Markinch), Rutherford (Edinburgh), Reid (Leith), Young (East Calder), Baird, junior (Edinburgh), Storie (East Linton), Black (Howgate), Aitken (Edinburgh), Waugh (Stirling), Reekie (Edinburgh), and the Secretary.

Letters regretting inability to attend were received from Professor Vaughan, and Messrs. T. Taylor and Tedbar Hopkin (Manchester), and McIntosh (Dumfries). Professor Baird, Dick Veterinary College, as retiring President, thanked the members for the courtesy extended to him during the past year, and begged to introduce Mr. Rutherford, his successor in office. Mr. Reekie was elected a member of the Association.

The *Secretary* then presented his report concerning the membership of the Society and the state of its funds. The report was adopted. He also reported that the honorary secretary of the National Veterinary Benevolent and Mutual Defence Society had kindly furnished him with copies of the rules and regulations of that body, which he had circulated among the members of the profession in Scotland. He stated that he would postpone the motion, of which he had given notice at the previous meeting until the provisions of the agreement between the Highland and Agricultural Society and the Royal College of Veterinary Surgeons had been carried into effect.

The *President* gave notice of his intention to move at the next meeting, that the Association subscribe annually the sum of one guinea to the Society for the Prevention of Cruelty to Animals.

Professor Walley exhibited a specimen of osteoid sarcoma in the femur of a cat, of which the following are the notes :

The subject of this affection received an injury about two years ago, the femur, it was thought, being fractured. For some eighteen months the case had been under the observation of Mr. A. Grey, junior, and as the leg had attained an enormous size, and the cat had become very anæmic, she was poisoned, Mr. Grey submitting the diseased limb for my inspection.

After removal of the skin, the limb presented the appearance of an enormous pear-shaped swelling (the circumference of which was as great as that of the cat's body), extending from the head of the femur above to the tarsus below. Its surface offered several salient fluctuating points, which on puncture gave exit to a tenacious bloody fluid, and on pressure characteristic egg-shell cracking could be detected. On cutting through the tumour in a longitudinal direction, the usual characteristics of an osteoid-sarcoma were well shown, viz. firm, dense, glistening tissue of a whitish-grey colour, between which numerous loculi existed, whose walls were composed of thin layers of cartilaginous and ossific matter, and containing masses of semi-coagulated blood, with fluid of the same character as that which was evacuated prior to section. The surrounding muscles were atrophied, some of them absorbed, all of a pale colour, and largely infiltrated with sarcomatous elements.

The whole of the lower half of the femur was absent; the distal extremity of the upper part was expanded, and its medullary cavity hollowed out.

Microscopical examination revealed a very delicate fibrillated stroma, with large spindle and myeloid cells, the former greatly predominating in number. A certain proportion of coloured and colourless blood-corpuscles were also present.

As may be easily imagined, the tissues of the body were extremely anæmic and the blood-vessels empty.

Professor Walley also exhibited the small intestines of a foetal calf, which was the subject of spiral torsion, the axis being a fold of the mesentery. Venous strangulation was complete, and the intestine, as a consequence, presented the thickened, intensely hyperæmic, and ecchymosed condition seen in intestinal torsion of the adult animals. The foetus from which he obtained the specimen had been forwarded that day by Mr. Taylor, of Seaford, and it was in the course of dissecting it that Professor Walley discovered the state of the intestine. The foetus was extracted from a cow by Mr. Taylor, two days previously; it was of large size and fully developed, but had never breathed, and was a beautiful and perfect specimen of a *Dicephalus bispinalis* quadrupes monstrosity, the two heads, necks, spines, and tails, being perfect. The four legs also were perfect, and the chest was nearly a yard in girth. On dissection, it was found that all the internal organs were fully developed, but single. The sternum and pelvis were also single, and no connection other than these, the skin, and connective tissue, existed between the two spines. There were two sets of ribs, the superior set being much shorter than the inferior.

Both spines formed a distinct lateral curvature in the posterior part of the thoracic region.

Mr. Taylor had not had time to give any particulars of the case, further than that the foetus was extracted with some difficulty, and the cow was doing remarkably well. He promised details in due course.

The *President* then proceeded to deliver his inaugural address as follows:

Gentlemen,—In accordance with a promise made about a year ago, I propose in this my inaugural address to give you a sketch of the history of Inoculation for the prevention of Zymotic Pleuropneumonia, its practice, &c. In Gamgee's 'Domestic Animals in Health and Disease,' published in 1862, we find it recorded that Dr. Willems, of Hasselt, in Belgium, suggested and carried out in 1851 inoculation with the virus of pleuro-pneumonia, in order to induce a mild form of the disease in healthy animals, and so prevent their decimation by attacks due to contagion. The work met with much encouragement, but, perhaps, quite as much opposition; for while many accepted Dr. Willems' results as incontestable, and wrote advocating his mode of checking this destructive plague, as many more, notably Riviglio, a Piedmon-

these veterinary surgeon, ably contested the validity of the conclusion arrived at by Willems. Gamgee further records that in 1854 a commission was appointed by the French Government to make investigations into the subject, and that, although they in part confirmed Riviglio's unfavorable opinions, they, from the incompleteness of their experiments, recommended a further trial of it. Gamgee himself, at this date (1862), was evidently violently opposed to it; for we find him say, "The practice of inoculation is one which I have to condemn from experience," and that any good which follows its adoption is such as would follow the use of setons, and is obtained at the cost of a certain percentage of deaths, and cases of gangrene of the tail. Again, on the same subject, he says, "The all-important question, Is inoculation of service? has been solved, for the Belgian and French commissions, Riviglio's, Simond's, and Hering's observations, with those of many more (added, I presume, to his own experience), prove that, while a certain degree of preservative influence is derived by the process of inoculation, it does not arrest the progress of disease."

I desire you, gentlemen, to note that opinion, published by Mr. Gamgee in 1862, for further on I shall be able to show you how completely it has been upset.

Holding the opinion he did in 1862, it appeared strange to me that he should, in company with Hering, another dissentient, at the first International Veterinary Congress, held in Hamburg in the following year, 1863, be a party to a resolution which was passed to the effect that the inoculation of cattle should be made compulsory. At that Congress, there were present, in addition to Gamgee and Hering, already mentioned, Professors Gerlach and Hertwig, of Berlin, Boll, of Vienna, Nicklas, of Munich, and some others equally eminent, and it is worthy of note that no opposition was raised to the resolution. It may had been that they did not think it worth while, believing in the then unsatisfactory results of inoculation being sufficient to deter any Government from giving effect to the resolution, but it may also have been that their minds were not fully made up—that, in short, while sensible that in inoculation there existed a beneficial result, it was not such as they would require to have before subscribing fully to it. Whether or not the Continental veterinary mind is any clearer on the subject now, I cannot tell you. Gentlemen, I am afraid it is not, else we would have heard more about it.

In this country, then as now, I believe I am correct in stating that the veterinary profession were, and now are, against the practice, at least all with the exception of a very very few—so few that they may be counted on the five fingers. I have been particular in noting the state of the veterinary mind at that time, because from my own experience I am fully convinced that the adverse verdict arose from the misapplication—I would use a stronger term, "ignorance"—of the true method of inocula-

tion and blindness to the conditions which are necessary to its successful practice.

The measure of success with which, however, inoculation had in some instances been attended, was happily quite sufficient to keep it from dying out. Slumbering on the Continent, tabooed in this country, it yet managed to gain a footing in Cape Colony, where to the best of my belief, it is still practised. From the Cape it found its way to Australia, and was first successfully tried there in 1862, the very year, strange to say, in which it had been so unhesitatingly condemned by Gamgee here.

Introduced by a cow landed in Melbourne from England in 1858, pleuro-pneumonia had gradually, but none the less surely, spread from Victoria to the neighbouring colonies of South Australia and New South Wales, and from thence into Queensland. All attempts to stamp out the disease by quarantine and wholesale massacre proved useless, and as the rapid march of the scourge bid fair to deprive the country of one of its principal sources of wealth and economy, stockowners began to consider if there was no other method of combating it.

It was then that inoculation was tried, by first one and then another, and so on; and although it must have been under very adverse circumstances, the results were largely satisfactory, so much so, that for a time the operation became a very general one, as it is at the present time.

It must not, however, be supposed that its introduction there was unopposed, or that its growth had been a regular one. On the contrary, to my knowledge, it has met with very severe handling, hostile criticism, and, in some isolated instances, I believe, condemnation. At first its success in the hands of a careful few was all that could be desired; but as its more general adoption grew with men's fears of the disease, and its rapid spread throughout an extensive country, those best acquainted with the mode of operating and the necessary precautions to be observed were unfortunately too few to be of much avail in preventing the operation from getting into the hands of adventurous anybodies, whose sole aim was the filling of their pockets for the time, not the successful application of that which they pretended to practise.

You may imagine the results. The deaths from casualty and malpractice were quite as many as from the disease. Frequently the cattle were not inoculated at all; so that, between malinoculation and the disease, they were often worse than they would have been if left alone. This was notably the case in Victoria and Queensland, but not so much so, I believe, in New South Wales, where the most intelligent personal efforts of Chief Cattle Inspector Mr. Bruce to instruct had, as they continue to have, the best possible results.

Up to 1868, I cannot say that I had given the subject of inoculation any consideration. As a student I knew its literature and of Mr. Gamgee's attempt to introduce it into Edinburgh

(that, of course, prior to 1862), and also of its ignominious failure in his hands; and as I had no means of knowing that the failure arose from the operation being grossly wrongly performed, if I had any opinion at all, it was, I would say, an adverse one.

In the year mentioned, however, and yearly afterwards up to 1874, I had occasion to be in Australia, and had my attention drawn very strongly to the subject by Mr. Graham Mitchell. That gentleman was kind enough to furnish me with the fullest information with regard to it; more, he demonstrated its efficacy so convincingly that I have to acknowledge that it is entirely to him I owe the debt for any credit which has attached itself to my work here in Edinburgh. Mr. Mitchell, I believe, has to be credited with the honour of being the first uniformly successful practiser of inoculation, and has reaped his reward.

I have now brought the sketch down to 1874, in which year I returned to this city; and although I have almost immediately abundant opportunity of trying conclusions between inoculation and pleuro-pneumonia, I found the disastrous results obtained by Gamgee so vividly in the recollection of the dairymen that it was impossible for a time to get any one to permit of its re-trial. I must tell you I did not promise that the thing would be a certainty, because my experience of it in Australia was derived from what I knew of its operation upon cattle living a natural life, under a very superior climatic and other conditions, in which respect they differed very materially from the great bulk of our subjects here, at any rate from my subjects—dairy stock—existing under what may be termed high-pressure conditions. I know, however, that the disease abroad was the same as here, and was of opinion that if Mr. Mitchell's method was adopted in preference to that of the Continent, that we would get Mitchell's results. That my opinion was correct, has been fully and conclusively verified.

I have made an abstract of my last year's work, and I find that I commenced to inoculate on the 1st of February, and I left off on the 18th of November. During that time I inoculated in 78 different localities, all of which, with the exception of 51, were within three miles of this room.

Of these places there were

| | | |
|-------|-------------------------------|----|
| | Infected at date of operation | 70 |
| Not | „ within three months prior | 2 |
| Not | „ „ six months prior | 3 |
| Never | „ | 3 |

The number of animals inoculated was 1596, all of which, with the exception of 28, were milch cows.

Of this number 1511 were inoculated when the disease was in the byres in which they were housed.

46 had not been exposed for three months to an infected animal in their byres.

21 had not been for six months.

and 18 never, so far as the byres were concerned.

Of the gross total, I lost a fraction under 5 per cent. from casualty, the result of inoculation, and from failure of inoculation to give immunity. I would, however, ask you, gentlemen, to bear in mind this very important circumstance, that 5 per cent. of casualty is a very much lower death-rate than has been yet obtained; and as my work last year was largely experimental, I am sensible its being so increased my average. I am fully of opinion that, entering this year again upon the same course, with my last year's experience, I shall, if spared, be able in another year to report to you a still lower one. My death-rate was not in proportion to the individual number done in individual instances, but to the systemic conditions under which they were done, the mode of operation, the weather, &c. Hence it is that I say I have now a knowledge of a great deal to be avoided, which I had not last year. Taking the systemic conditions first, I find that it is not advisable to inoculate cows immediately before calving. I would not like to do it upon any cow that had less than eight or ten weeks to run; nor is it advisable to do it immediately after calving. At least fourteen days ought to be allowed to elapse, and it should only be done then if the animal has both locally and constitutionally recovered from parturition.

It should not be done, but deferred, if there is the slightest degree of inflammatory action in any part of the body; in short, the animal should be, as far as we can ascertain, well in all respects. It should not be done if we consider the animal to be already affected with pleuro-pneumonia; but, at the same time, I must tell you that I have reason to think that there is a stage of the disease, the very earliest, when, if inoculation is performed, good results may reasonably be expected to follow. I do not advise it, however.

It is not advisable to inoculate in very hot weather, such as we experienced last July, especially if the animals are in close, confined, and badly ventilated byres; and it is still less advisable to inoculate during the winter months, unless special arrangements can be made for maintaining a uniform warm temperature. It is not, in my opinion, advisable to inoculate with any but one kind of virus, and that should always be fresh and absolutely free from any foreign matter. During last summer I tried several plans, with the view of obtaining perfect results with less risk and inconvenience to the animal; but I have, as the results of my experience, resolved not to do so any more. The very few animals that I have had take pleuro-pneumonia within a reasonable time after inoculation—say, after a month—have invariably been animals inoculated mildly; in fact, that had not been inoculated at all, as compared with others. I would ask you to note that mild or modified inoculation is not to be depended upon, and should not, therefore, be practised. I am of opinion that there is only one mode of inoculation, and shall now describe it.

The virus or lymph should be obtained from an animal not too far gone in the disorder, and from one that is in other respects

in fair condition, and free from other disease, as for instance, tubercle. "Lymph" is the amber-coloured liquid exudate found in the interlobular tissues, between the pleural membrane and lung, and occasionally in semi-coagulated masses between and on the surface of the pleura. Too much care cannot be taken in selecting the lymph to be used, as its fitness is the most important thing in connection with the operation. I have said select and use only the liquid amber-coloured exudate free from blood, serum, and other extraneous matter; do not on any account be tempted to use anything else. The want of due care in this respect was one of the chief causes of the failure of inoculation in Gamgee's hands, as it has been in that of others, and would be again in like circumstances.

Having obtained your lymph, you saturate with it as many pieces of white worsted, eight to nine inches long each, as there are animals to operate upon. The instruments required are a pair of strong clipping scissors, a pair of rowelling scissors, and the needle. The latter should be four and a half inches long, about a quarter of an inch broad, rounded on the edge, and carefully tempered, so as not to break or bend, lancet-shaped at the point, just behind which it should be pierced with a long eye, and be slightly grooved for retention of the thread. It should be fitted with a small handle, to facilitate the passing of it through beneath the skin.

The proper place to inoculate is the tip of the tail. Of course you can inoculate any part of the body; but the tail-tip is to be preferred, because you get perfectly good results from operating there; and if, during the process that follows inoculation, it should become necessary to remove it, such may be done with no risk and little inconvenience to the animal. Further, extensive swelling of a specific character and gangrene are less likely to follow the operation when the tip is selected in preference to the root of the tail.

In operating you require the assistance of two men and a lad; one man to hold the animal by the head, one to distract her attention behind with one hand, while with the other he grasps the tail firmly to prevent it from being whisked out of the operator's hand. The lad is required to hold a saucer, containing the threads, ready saturated in the lymph, to be used.

The operator, standing behind the animal, seizes the end of the tail, and with the scissors removes the hair, beginning an inch or so from the extreme tip, and clipping upwards for five or six inches, and leaving only a short tuft at the end. Then with the rowelling scissors he makes two transverse cuts through the skin on the posterior aspect of the tail, leaving a space of three inches at least between the cuts. The needle is then slightly dipped into the lower cut, passed upwards and outwards through the upper cut, and turned round sharply several times to enlarge the channel. Then threading the needle with a doubling of the worsted, he carefully

withdraws it, leaving the saturated thread in the tail; and after cutting any too long ends of the worsted off, the operation of inoculation in its first stage is complete.

Within two or three days after inoculating the part operated upon becomes slightly swollen, painful, and erythematous, but there is no discharge from the orifice, similar to what we get from the introduction of an ordinary seton; the swelling locally increases; and although the tail above may not be in the least degree swollen, the animal is not able to lift it. About the ninth day the skin is observed to take on a yellowish tinge, there is a rapid desquamation of the cuticle, followed by an exudation on its surface of beads and amber-coloured lymph, similar to that introduced, and possessing similar properties. It usually takes from nine to twelve or thirteen days for the exudate to make its appearance. Occasionally a longer time is required, but when it does appear, inoculation may be considered to have been successful, and the second stage is complete.

There are two courses now open to the operator, and much of the success of the operation depends upon which he will adopt. He may elect not to interfere with the process, but allow it to run its course, which, under ordinary circumstances, will be death and wet gangrene of the end of the tail, followed by its being thrown off. This is usually done by nature establishing a line of demarcation above the gangrenous end, sufficiently powerful to resist the spread of the gangrene. It is, however, impossible to be certain of this line being drawn, or the position of it; and the risk is then materially increased of gangrene spreading upwards towards the root of the tail, where it becomes highly dangerous. For this reason, I advise the non-adoption of the plan of allowing the process to run its own course. I find the best plan is to remove the end of the tail, when once inoculation is fairly established. There are cases in which this must be done even earlier, and there are others in which it may have to be accomplished more than once; as, for instance, when the sudden setting in of coldness of the end of the tail indicates the death of the part. The best guide we have for knowing at what place to amputate is obtained by examining carefully the end of the tail. The part to come off may not necessarily be cold, but it will be wet with exudate, and probably somewhat discoloured for an inch or so above it. I find that where amputation is practised early—say on the twelfth to the fourteenth day—that it is not necessary to make the division more than a finger's breadth or so above the upper incision made in inoculating. The amputation should be followed by profuse bleeding. If not, and if on examining the end of the stump we find clotting of blood in the vessels, amputate again higher up till bleeding follows. Neglect of this measure is apt to be followed by gangrene; in fact, the engorged vessels are an indication that it has already set in.

Where a number of animals have been operated upon, you will find that several of the tails will, after amputation of the inocu-

lated portion, scab over and heal almost at once without further inconvenience. In the greater number of cases, however, swelling of the end of the stump sets in (and so long as it remains warm, no anxiety need be entertained), followed by suppurative process and the throwing off of a small portion of the tail. This process, I have said, is not to be feared; neither is the formation of abscess higher up, so long as it is confined to the tail. All the local treatment necessary is fomentation twice or thrice a day with carbolised water, and the dipping of the end of the tail in a strong solution of carbolic acid—the latter always after milking. A large percentage of the cases heal up by the end of the fourth, fifth or sixth week; but very few extend beyond these periods, unless abscess has formed at the root of the tail. I must point out that this is not ordinary abscess, but is owing to the localisation in the part of the peculiar inflammation induced by inoculation, to the formation of exudate in a firm solid mass, and to its subsequent partial liquefaction, when softening and pointing of the skin take place.

I have said that the abscess following exudate deposit at the root of the tail occurs occasionally as an ordinary sequel of inoculation; but more often it is the result of a kick when the animal is lying, or a blow with a milking stool or stable fork, either of which, I regret to say, is much too frequently administered. When the result of external injury, the swelling is usually on either side of the tail, over the ischiatic prominences, on the butt of the tail, or the quarter; I have also seen it on the ribs, the shoulder, and front of the sternum, in which situation the provocative is a bruise in lying down, or against the trevis post or feeding trough. So long as abscess forms there is no danger to be apprehended; but if, instead of abscess, you get extension of the exudate, loss of appetite, and symptomatic fever, the case becomes a grave one, and the animal had better be slaughtered. In like manner should she be treated when the urino-genital organs and regions become similarly affected from extension of the exudate from neighbouring parts. The condition presented by a cow in the latter circumstances is so painful that we may congratulate ourselves it is not of very frequent occurrence; and I am satisfied that experience will do much in the way of rendering it less frequent.

Scarification to give relief to the exudate has been recommended by the Australian authorities, but my experience does not bear out its practice; on the contrary, the one thing that affords relief is constant fomentation with water almost too hot to bear and strongly carbolised.

Males, young stock, and calves, I find from experience, can be inoculated with little or no risk, in Australia the percentage of death and casualty being lately given as low as 2 per cent. During last season, I inoculated only about thirty bullocks, but I did a considerable number of calves in different infected places, and with the best possible result—no casualty, and as yet perfect

protection. This is a very important fact; for should inoculation ever become general in this country, the necessity for doing it upon our home-bred stock when purchased into dairies would be obviated by their being done at an early period of their life, when the operation, while being equally protective, is attended with little or no risk, and does not call for any after attention and treatment.

I have nothing to say to you on the subject of diet while animals are under the operation. I have inoculated under all conditions in this respect, and find that the diet only requires to be rather below than up to the mark in quantity for the first three weeks, and of a nature calculated to maintain the perfect health and function of the stomach and bowels. The French commission, I think, recommend a saline purgative about the eighth or ninth day; and to some kinds of stock I believe the medicine would be of great benefit. There are objections, however, to its employment so far as dairy cows are concerned, and I hardly think it would be necessary to physic in the case of grazing stock. If it is deemed advisable to give any opening medicine, the purpose will be fully and efficiently met by the occasional admixture in the soft food of sulphur and treacle.

This, of course, is with the view of lessening any attendant fever. I have not, however, found that there ever is much, the thermometer rarely rising above 102 degrees. Certainly we observe a certain amount of dulness, with staring coat and restlessness for a few days, and occasionally—not always—a slight diminution in the secretion of milk. These conditions, however, are premonitory to the occurrence of the local conditions characteristic of true inoculation, and should not be interfered with. With the decline of the process, there is always a very keen appetite, abundant secretion of milk, and great tendency to thrive well.

And now, gentlemen, I think I have said sufficient, and have occupied your time long enough for one hearing. I have left a great deal unsaid; much that I would like to bring before your notice, and some of it of the very greatest interest, both as regards the theory and the practice of inoculation. That must, however, be left for some future occasion, by which time I shall hope to meet some, if not all of you, as practisers of this great work, able to sustain me in the declaration which I here make, "That in inoculation we have an agency which, if intelligently applied, is unfailing in arresting and preventing the course of pleuro-pneumonia, no matter what the conditions are under which it exists."

To some here, and to the profession at large, that, I daresay, will seem a bold thing for me to say. I, however, have had abundance of opportunity of well trying conclusions on the matter, and feel myself quite justified in declaring further, "that so certain and absolutely protective is inoculation in its effects," that I feel confident that, as its practice extends, the dread of

pleuro-pneumonia and the difficulty in dealing with it will become as nothing; and that our profession in practising it will, while benefiting themselves, largely contribute to the prosperity of their clients individually, and to the wealth and general good of the country.

After some remarks from Mr. Robertson, Mr. Cunningham, and Professor Walley, the meeting was brought to a close, and the members afterwards dined together.

February 5th, 1879.

J. McFADYEAN, Secretary.

THE NATIONAL VETERINARY BENEVOLENT AND MUTUAL DEFENCE SOCIETY.

THE eighth general meeting was held on Friday, the 14th February, in the Medical Institute, Liverpool, the President, Mr. P. Taylor, in the chair.

There were also present—Messrs. Thos. Greaves, Thos. Taylor, W. A. Taylor, T. Hopkin, E. Faulkner, and S. Lock, Manchester; R. S. Reynolds, J. Leather, C. W. Ellam, D. Hutcheon, R. Stevenson, and W. A. Wilson, Liverpool; Jos. Welsby, West Derby; J. Freeman and D. Sowerby, Hull; Jos. Carter, Bradford; Wm. Schofield, Pontefract; Jas. Storrar, Chester; Wm. Dacre, Altrincham; D. Rothwell, Woolton; Wm. Woods, Wigan; W. Whittle, Worsley; and the Secretary. Letters of apology were received from several members unable to attend.

The minutes of the last general meeting having been read and confirmed, as well as the minutes of the several meetings of council that had been held in the interval, containing a *résumé* of the cases with which the Society had to deal, the President delivered the following address:—

GENTLEMEN,—This meeting has been called to ask you to review our past work, our present position, and to alter or arrange our rules for our future guidance and direction, and the election of office-bearers to fill vacant places. I meet you to-day with mixed feelings of pleasure and sorrow. We have to lament a great loss by the death of our honorable colleague and vice-president, the late Gilbert Heyes, of Liverpool. He was an active member of our Society since its formation, and for the last ten years fulfilled the duties of vice-president. All of us have lost a kind-hearted, honorable, and active friend; one who was ever ready to assist the poor and needy of our profession, and give a helping hand to a professional brother when in distress and difficulty. I hope some kind member of our body will make a motion that our Secretary be instructed to write a letter of sympathy and condolence to his sorrowing widow, in the irre-

parable loss she has sustained. We have also lost other members by death, and amongst them was the late Alfred Challiner, of Bolton. Under this dark cloud of affliction we have a glimmering ray of light in the horizon, which cheers our hearts to advance onwards with a firm resolution in the good and charitable work we have in hand. I am more than pleased to announce to you that the first and beneficent legacy of the sum of £50 has now been paid to the National Veterinary Benevolent Fund, which was left to this Society by the late esteemed and noble member of our profession, the late William Field, junr., of London, the inheritor not only of a noble name, but he was a great worker in his time in advancing the status of our profession, and who has, by this generous act, shown to that profession he so loved the nobility of his nature by leaving behind a sum of money to be added to our Benevolent Fund, that will for all time to come be written down in the pages of our history, and be handed down to our posterity that William Field, junr., lived and died to assist our National Veterinary Benevolent Society. He was the first member of our body to leave behind a legacy that will redound to the honour of his name, and be a great and noble example to all future ages and to the wealthy members of our body—"do likewise"—for it is to provide for the wants of the sorrowing and poor widows, the kind, affectionate orphan children, whose parents were removed from this busy scene when probably in the meridian of life and activity, and also for the helpless, desolate, and oppressed members of our body, and to those who are afflicted by sickness or disabled by accident from following their professional calling. An example like this I wish in my humble way to place before our profession, as I know there are many more in our ranks who have equally generous hearts, and who have also ample means for doing good to our noble Benevolent Society. Gentlemen, there was some little legal difficulty respecting the late Mr. Field's, junr., legacy to our Society, and the matter was referred to a court of law, and decided in our favour. We are much indebted to Matthew Harpley, Esq., F.R.C.V.S., and Veterinary Surgeon to the Royal Horse Guards, for the very kind and courteous manner he watched over our interest and advocated our claim; for these services our warmest thanks are due to him. We have assisted for the last eight years two orphan girls, affectionate and kind children of the late George Brown, veterinary surgeon, of Pendleton. It affords me much pleasure to be able to state that the large amount, £902 13s. 1d., is placed to our credit at the bank on behalf of the Benevolent Fund. We have also in hand the cheque of £52, besides some annular subscriptions, and entrance fees. This Fund, as you are well aware, is held in hand for the special purpose of rendering assistance to those of our Society who are in need. You will have seen a case in the November number of the *Veterinary Journal* of last year, wherein the editor kindly said the Benevolent Society might show her

generous conduct; but we have rules to direct the office bearers. The person named was not a member of our Society; but if you think you can conscientiously bestow a charity, I commend it to your notice and kind consideration. I know that I shall be met with an answer, that we must be guided by the rules. I know that; but I do think that the bestowal of a charity in a good cause and to a professional brother in need will redound to our honour, and carry into the ranks of our profession who are not members of our body a salutary feeling to join such a good and noble society.

Respecting the defence branch of our National Society—the industrial part of our Society—industry is a noble thing, being the energetic engagement of the body and mind in useful employment. Even benevolence depends on industry. Labour with your hands at the things that are good, that you may have to give to those that need it—therefore you can see how harmoniously the two branches of the Society work together for each other's mutual advantage. Your office bearers and council have had arduous, difficult, and delicate duties to perform since we last met. Here in Liverpool, we attended many times and arbitrated two large claims, and settled them at a cost to the Defence Society of £66 12s. At the close of last year's, we visited Middlesborough and Leeds three times, and defended a case in the County Court at Leeds, and this case cost us £38 18s. 4d., making a total cost for the three actions defended by this Society of £105 10s. 4d. The Leeds case was peculiar and intricate, you will have seen it in our veterinary journals, and one which places upon record that a professional man is considered an expert in that particular branch of science he represents, and is actionable at law for a sum of money, if he conscientiously gives an opinion, which would be at variance with two of his brother experts. We have an able and judicious member in our Council who considered that we were entitled to our opinion, and unless it could be proved that carelessness or negligence were used in coming to that opinion, he had a right to give it, and would not be actionable at a court of law, but this case proves that opinion to be fallacious, and although we lost the case, the plaintiff sued for the sum of £50, he only got a verdict for £15, and although we feel a little humiliated, we were not disgraced or dishonoured as the learned judge exonerated the professional man from all impure and unjust motives. A great number of other cases have been arranged and settled by the tact and wisdom of your office bearers and council, and a many cases have had our united opinion upon the advisability of coming to an amicable settlement or what we considered the most prudent course to pursue; although not members of our Society, I cannot speak too highly of the great and efficient services given by my brother office bearers, and by the kind, attentive, and intelligent manner your council have bestowed on all cases brought before them, and with what care they guarded the interests of

your Society and the welfare of the aggrieved parties. Unjust and excessive demands will be made, but in all cases let us seek to conciliate all conflicting claims by justice and equity—not by law—as it has been well said by Pope :

“Honor and shame from no condition rise,
Act well your part ; there all the honor lies.”

The *President* then proposed that the entrance fee for new members be raised to £5, which proposition was seconded by the *Secretary*. An amendment by *Mr. W. A. Taylor*, seconded by *Mr. T. Hopkins*, that the entrance fee be £2 2s., led to a considerable discussion, but the original motion was carried, with the addition that the increased rate should not take effect before the 1st of January, 1880.

The following proposed new rule was, after considerable discussion, withdrawn :—“That no one shall be defended until he has been six months a member of the Society.”

The *President* then proposed the following new rule, which was seconded by *Mr. J. Leather*, and carried :—“It shall be incumbent upon a member having reason to suspect a client of intentional ill-will, or in the event of a dispute, to call in one or two professional brothers to advise upon the case ; and, if immediate dissolution be likely, to value the animal in question, and after death attend a *post-mortem* examination. The written opinions and certificates of the professional men called in to be sent to the President or Secretary.”

Mr. Greaves then proposed the following new rule, which was afterwards withdrawn :—“In any case the members shall show a disposition to assist and conciliate the owner, and the officers of the Society shall have a discretionary power to have an interview with the plaintiff with a view to settlement.”

It was then proposed by the *President*, and seconded by *Mr. Greaves*, “That Mr. Richard Sam Reynolds, of Liverpool, should be elected Vice-President of the Society, in place of Mr. G. Heyes, deceased,” and carried unanimously.

Mr. Woods then proposed that a letter of condolence be transmitted to Mrs. Heyes on her great loss, and that the same be entered in the minutes of the Society. Carried unanimously.

After a cordial vote of thanks to the President for his services in the chair, the meeting terminated.

GEORGE MORGAN,
Hon. Sec.

Veterinary Jurisprudence.

CONVICTION FOR DRIVING A GLANDERED HORSE.

DOWNHAM PETTY SESSIONS, MARCH 17TH.

Jonathan Clifton, of Downham Market, carrier, &c., was charged by Superintendent Watson with driving on the highway a certain mare affected with the contagious or infectious disease of glanders. Superintendent Watson, on March 14th, went to a stable on the Lynn road, occupied by Gammard, and there saw a mare which he believed to be suffering from glanders, and charged the defendant with having caused the mare to be driven through the streets of Downham.

Mr. B. H. Calver, the inspector under the Contagious Diseases (Animals) Act, saw the defendant's mare in his yard, on March 13th, and told him at once it was suffering from glanders, which was incurable, and told him to take it to his own stable till he heard from witness, and at the same time he explained to him the consequences of exposing the animal. Defendant's stables were in Parson's Lane, and it could be taken there with less danger than it could to Gammard's stables.

Henry Gammard said he bought the mare of defendant for a sovereign unseen. Defendant said she would not do his work. On Friday evening last, about eight o'clock, defendant brought the mare, and put it into his stable. Later in the evening Mr. Calver and Superintendent Watson came to the stable, and in consequence of what they said he shot the mare next day.

Defendant was fined £1 and costs 26s. 6d.

THE CONTAGIOUS DISEASES ACT.

EDGWARE PETTY SESSIONS.

Alfred Thrupp was charged with having four sheep affected with the scab, and unlawfully neglecting to give the necessary notice to the police, and further with keeping them in a place insufficiently fenced. Defendant's wife pleaded guilty.

Charles Offer, veterinary inspector for Kilburn district, stated that on the 3rd of February he saw some sheep affected with scab in Mr. Furness's field at Harlesden, and he ascertained they belonged to Mr. Thrupp, an adjoining occupier, and had strayed into Mr. Furness's field. He subsequently saw the sheep at Mr. Thrupp's, and informed Mrs. Thrupp that the law required the owner to have the sheep properly treated and kept on his own premises. The sheep were slaughtered the next day.

Mrs. Thrupp said her husband did not occupy a farm; they

were pet sheep and they did not know the regulations as regarded giving notice to the police.—Fined 7s. and £1 13s. costs.—The money was paid.—*Willesden Chronicle*.

PARLIAMENTARY INTELLIGENCE.

HOUSE OF COMMONS ; *Monday, March 3rd.*

THE AMERICAN CATTLE TRADE.

Mr. J. Barclay asked whether, if the Veterinary Department of the Privy Council found that cattle in the Western States of America were free of disease, the importation of store cattle from these States through Canada would be permitted.

Lord G. Hamilton said that so long as contagious pleuropneumonia existed in the United States it would not be consistent with the 5th schedule of the Act of last session to exempt cattle coming from America from the provisions of that Act relating to the slaughter of animals at the port of debarkation. (Ministerial cheers.)

ARMY APPOINTMENT.

WAR OFFICE, PALL MALL ; *March 14th.*

VETERINARY DEPARTMENT.

John Thomas Dibben, gent., to be Veterinary-Surgeon on probation, in succession to Veterinary-Surgeon (First Class) G. Evans, M.D., promoted from Royal Artillery.

GAZETTE, *March 21st.*

Veterinary Surgeon (First Class) William Albert Russell, from the 14th Hussars, to be Veterinary Surgeon (First Class).

OBITUARY.

WE deeply regret to have to report the death, on March 26th, of a distinguished member of the profession, Mr. Richard Barrow, Dullington, Newmarket. His diploma bears date June 14th, 1837.



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Communications and Cases.

REMARKS ON THE *FILARIA MEDINENSIS*, OR
GUINEA-WORM; ON THE OCCURRENCE OF
THIS PARASITE ENDEMICALLY IN THE PRO-
VINCE OF BAHIA; ON ITS ENTRANCE INTO
THE HUMAN BODY BY DRINKING WATER.

By J. F. DA SILVA LIMA, M.D., Officiating Physician at the
Hospital da Caridade, Bahia. Translated from the
Portuguese by Dr. J. L. PATERSON, of Bahia, and com-
municated to Professor COBBOLD.

(Concluded from p. 238.)

PART V.

A WORD or two in regard to the origin among us of the Guinea-worm. Has this parasite been brought among us along with the black slaves, or did it previously exist in the country, becoming only more frequent after the introduction of the slave trade, or, at least, after the establishment of maritime intercourse between the two continents? The fact of the parasite being endemic in one locality of this province does not necessarily exclude the idea of its having been imported in the time of the slave trade; it might have become acclimated there, as some authors believe it did in other parts of America into which blacks were imported from the coast of Africa. In the thesis above referred to Dr. Victorino Pereira asserts positively that the parasite was

imported, and in the person of the African slaves. Although I cannot adduce proofs sufficient to decide peremptorily this question in the negative, yet I cannot, on the other hand, believe that those brought forward by my learned friend are such as to warrant his deciding it so categorically and positively as he does in the affirmative. His reasons are the following:—

“1st. Traditional opinions to that effect; the fact of the parasite being known to the common people under the epithet of the Guinea-worm *bicho da Costa*; and their unwavering conviction that it never showed itself except in the person of Africans.

“2nd. The fact that, as far as we know, none of the countries, such as Bohemia, Peru, or Chili, bordering on Brazil, but having no African slave trade, ever suffered from the scourge.

“3rd. The silence of Pison and other authors as to the parasite being endemic among us, and these never referring to it as a cause of disease among the natives.”

Traditional opinions on the subject may have no surer foundation than that other popular belief that this parasite never attacked any other race than the African, though we now know that it shows no such predilection where other races are equally exposed to the infection. In the cases related, of the six attacked with the disease, one only was an African, who would appear to have neglected in his own person the warning he gave to his masters and his other companions; as for the epithet of the “*bicho da Costa*,” that may have been given it simply from its greater frequency in the African blacks, they having either brought it from their own country or acquired it on the passage across, from the foul water they drank. Besides, among the synonyms of the worms, we have that of *Dracunculus persarum*, from which I should infer it must have some other origin than that of Guinea or Medina. I know not if this latter refer to the town of that name in Senegambia or in Arabia. The *Dracunculus*, as is well known, is endemic in many parts of Asia, where its existence can hardly be laid to the door of African immigration; nor its absence, therefore, even if true, from the countries to the west, be attributed solely to the non-existence of that immigration.

Pison and other authors, who neither mention the worm as endemic among us nor as the cause of disease among the natives, do not, at the same time, consider it as exclusively seen in the blacks from Africa, already in their time imported as slaves into this country.

The silence of Pison and other writers as to the worm being the cause of disease among the natives, proves no more the immunity of these than does the silence of Dazille or of Sing Gomez Ferreira prove that of the blacks of whose diseases they wrote during the time of the slave trade; for it is incredible that neither of these observers had ever heard of the *Filaria Medinensis*, even if we could suppose they had never met with a single case of their own among the blacks they had to treat.

The existence, therefore, of the *Dracunculus* endemically in this country before the importation of Africans, cannot, I think, for want of authentic documents as to this part of our medical history, be positively either affirmed or decided; at most it may be conceded that the second alternative, which would look upon the importation of Africans as the sole cause of its introduction among us, is the more probable of the two. But granted the truth of this hypothesis, we have still to look for an explanation, if not of the fact of its now or recently existing endemically in the neighbourhood of the Feira de Santa Anna, at all events of why it should exist only in localities so thinly peopled, at a distance not only from the coast, but from this capital, where recently-arrived slaves from Africa were wont to be crowded by the thousands. By what strange caprice of fate did it come about that the accursed seed was blown to such a distance, leaving intact our own vast lake, and all the suburban rivulets and dams as well as the reservoirs of so many sugar plantations, all along our bay, where new blacks were received in troops, many of them already infected with the *Dracunculus*? It is surely only reasonable to suppose that the parasite, if imported, should exist more abundantly in those localities where its importers, or "living vehicles," as my talented colleague the author of the remarkable thesis that suggested these reflections well designates them, were themselves most numerous.

On the other hand, we see almost at the same time Wucherer in Brazil, and Lewis in India, have brought under the notice of the scientific world another parasitic nematoid, also an endemic filaria whose coexistence in two so widely separated countries, having no direct communication with one another, cannot, with any plausibility, be attributed to their transport by "living vehicles."

However it be, the problem of the primitive origin of the filaria among us must remain for long, if not for ever, insoluble. Some light, however, may be thrown on the subject by the co-operation of other colleagues, having the

means and the inclination for investigating, if there exist in Brazil any other centres of *Dracunculus* infection, and how far any connection can be traced between these and the African slave trade.

And if such researches should appear at first sight to be more historically interesting than practically valuable, they may, nevertheless, come to be of great hygienic importance alike to the public and to individuals, besides adding something to our as yet small enough national scientific inheritance.

VI.

From what precedes I think we are warranted in drawing the following conclusions:—

1. That there is, in the province of Bahia, a locality where the *Filaria Medinensis* or Guinea-worm is endemic.

2. That this locality is in the neighbourhood of the Feira de Santa Anna, in the parish of S. José, and is a marsh bearing that name, as well as another bearing that of Pojuca, on the road passing through Jacuipé, towards Joazeiro.

3. That it is during the first rains, after a dry season, that the Guinea-worm is most frequently met with, and that, therefore, the use of the waters of these localities is the most dangerous.

4. That although the *Dracunculus* has doubtless other means of easy ingress into the human body, yet, beyond all doubt, it does also gain such ingress by the stomach, and in drinking water; and that, therefore,

5. The best means of avoiding infection is not to make use of any suspected water, unless after filtering or boiling it; or, better still, after both.

6. That the most probable, as well as the most generally accepted opinion, in regard to the origin of the *Dracunculus* in Brazil, is that which looks upon it as having been imported by blacks from Africa, it being undeniable that these often showed symptoms of its existence in their body either on their arrival or soon after; but neither this fact nor any document yet known can be looked upon as excluding the possibility of its existence in Brazil at a period anterior to the slave trade.

7. That the presence of the worm in the autoparasitic phasis of its existence in the neighbourhood of the Feira de Santa Anna, at a great distance from the coast, and its absence from those localities where newly imported slaves were most numerous, is of difficult explanation, on the theory of its being an African importation.

SYNOPSIS OF CONTINENTAL VETERINARY JOURNALS.

By JOHN HENRY STEEL, Demonstrator of Anatomy at the Royal Veterinary College.

(Continued from p. 246.)

Summary of Contents.—*Recueil de Médecine Vétérinaire*, 28th February, 1879:—*M. Louis Pasteur*, "Report on the Etiology and Prophylaxis of Charbon." *M. Rossignol*, on "The Thermo-cautery of Paquelin," 15th February, 1879. *M. Toussaint*, "Researches on Charbon." *M. Bouley*, "Veterinary Associations discussed at the Congrès Vétérinaire Honours and Appointments," *Revue Vétérinaire de Toulouse*, March, 1879. *M. Labat's* record of *M. Colin's* paper, "On the causes of death in Charbonaceous and Septic Affections."

The *Recueil de Médecine Vétérinaire*, 28th February, 1879, contains a report to the Minister of Agriculture and of Commerce, by *M. Louis Pasteur*, "Researches on the Etiology and Prophylaxis of Charbon in the Department of Eure and Loire." After touching upon the extreme prevalence of this generally distributed malady, especially in the Department in question, where a farmer considers himself very fortunate if he loses only two or three per cent. of his sheep in this way, the author examines that form of the disease supposed to be "spontaneous." *MM. Chamberland, Vinset, and Boutet* (senior and junior) co-operated in the investigation. "Every experimental research requires from him who undertakes it, an acquaintance of a comprehensive nature with the results obtained by former workers in the matter. Those ideas which have particularly guided me have been derived from recent experiments which I have made with the assistance of *M. Joubert*, at first, then of *MM. Joubert and Chamberland*. In the summary of conclusions on the work mentioned we have affirmed, with less hesitation than our predecessors, that charbon is due to Bacteria, the minute organisms first pointed out by the French physician, *Dr. Davaine*, in the blood of animals suffering from charbon. (But the veterinary Professor, *Delafond*, of Alfort, taught, as early as the year 1838, that in the blood of such animals there were microscopic staff-like bodies. The works of the Professor contain, as far as I know, no mention of the fact before *Dr. Davaine* drew attention to it in 1850. So, though

he notified it to his class every year, he does not seem to have attached much importance to it.) We have termed it the 'Bacteria disease,' because, having obtained the Bacteria in an isolated, perfectly pure state by means of repeated cultivations in inert media, we have been enabled by inoculation with them to produce the disease and death, and, on the other hand, we have shown that every other constituent of the charbonaceous blood is unable to produce the disease. Hence a programme of research presented itself. Is not spontaneous charbon simply caused by Bacteria and their germs, and if it is so, whereabouts in Eure-et-Loire is the *habitat*? This being settled, 'spontaneous' charbon would be explained. These questions have not been thoroughly settled by the first series of investigations of which I am going to give an account, but the idea that spontaneous charbon is produced by Bacteria, as is artificial charbon, is sufficiently probable now to allow me to take it as my guide and to act upon it, while reserving its actual proof for future work. Hence we have first tried whether charbon can be generated by charbon impregnated food, smeared directly over the surface with Bacteria or their germs, and if thus the symptoms of spontaneous charbon may be produced. We have shown that by this means it is difficult to transmit charbon. We took growing Lucern, and watered it with a cultivating fluid containing Bacteria.

Sheep having one or more feeds from this did not all succumb, often indeed, in flocks of from three to six, the mortality was *nil*. But this was not always the result, and when death ensued, it was always from charbon. Besides, we observed that when under these conditions charbon shows itself, it has a period of incubation of four, five, six, seven, or ten days, although by its latest symptoms it most frequently seemed rapidly destructive, as in cases of spontaneous charbon. Hence we infer that if in Eure-et-Loire there exist Bacteria germs spread over food or over the soil, they must be very abundant and with difficulty inoculated. So the inoculation to become efficacious would require special conditions. Such we have endeavoured to obtain mostly with the food-stuffs of the animals everything which could injure the commencement of the alimentary canal, by wounding the mouth, tongue, pharynx, the tender parts about the glottis, &c. So a food consisting of Bacteria-impregnated Lucern, with the different kinds of thistles which we find in fields or on the borders of roads, or with barley awns, produced an increased fatality. But even in such cases many animals either did not become affected or threw off the dis-

ease. Study of the anatomical lesions in these cases is very instructive, it enables us to state that the commencement of the disease is at the mouth or pharynx as well when we have to deal with the Lucern simply impregnated, as with the same associated with matters capable of injuring the animal. Hence we must allow that when the disease is communicated by a food which seems incapable of producing injury, wounds must have been previously present. But it is well worthy of note that we have observed that in spontaneous charbon the lesions have their special seat in the anterior part of the alimentary canal. At the time of death they are there most advanced, and it is thence, without doubt, they have been enabled to extend to the intestines and to all the body, probably, through the lymphatic system. We draw the following practical conclusions, supposing that our premises will later on receive more certain confirmation: charbon is communicated spontaneously to animals by food covered with Bacteria germs, but only when these animals have wounds, which they then give themselves during mastication, such as are insignificant as regards the general health, but very important in this respect. Thus the disease occurs only with difficulty, even where the germs abound. Many reasons show why great heat and a very dry season give increased number of cases of charbon. The simplest (but not the least probable) is that heat increases the tenderness and distension of the buccal mucous membrane, and so its liability to abrasions. Also a drought involves the liability to wounds by increasing the amount of mineral dust ingested and the hardness of certain portions of the food. Thus, if it is true that charbon germs are everywhere distributed more or less, but especially where the disease is enzootic, there is a very simple prophylactic means against the spontaneous development of the affection. Let the breeder diminish, as much as possible, all causes of injury of his animals, especially in the mouth, everything in the food which may abrade, such as thistles and similarly penetrating plants. During winter avoid very dry foods as straw; moisten such, or, preferably, allow them to ferment with green forage. Precautions, also, must be taken against siliceous dust of roads. It is advisable besides, to avoid every means of diffusion of charbon germs by animals which have died from the affection, for it is probable that the Department of Eure-et-Loire contains these germs in greater quantity than other departments, because charbon has been long established there, and the disease persists there, for its victims have never been so treated as to destroy the charbon germs. So, very similarly, the mulberry

and its bombyx having been cultivated in Paris and the neighbourhood, there is now scarcely such a tree in the place which does not support numerous families of that silkworm. The history of the phylloxera of the vine is a more forcible example of the acclimatisation becoming dangerous and terrible. We have endeavoured on our travels to ascertain whether certain parts of Eure-et-Loire, or, preferably, certain fields in a specified region are more fitted than those which surround them to generate spontaneous charbon as many agriculturists believe. We are still studying this matter, results on it have hitherto been negative."

With regard to the manner in which death is brought about in charbonaceous and septic diseases, M. Colin read a paper at the Académie de Médecine on 10th December, 1878, of which we extract the following notice from the *Revue Vétérinaire* (by M. Labat). "The following three views have been taken of the matter :

"1. Bacteria constitute an obstacle to capillary circulation, so that the cause of death is simply mechanical.

"2. Since Bacteria are bodies very greedy of oxygen, they absorb that which is in the blood, and bring about asphyxia.

"3. Affected animals die in consequence of the considerable reduction of their internal temperature."

The author passes these theories in review successively, and undertakes to prove their insufficiency. Thus, Bacteria cannot obstruct the capillary circulation. Their pliability, flexibleness, and the ease of their movements, render them eminently adapted to obtain free passage through even the smallest of these conduits. As an experiment, "after opening the abdomen of a living rabbit affected with charbon, we drew out a loop of intestine with its mesentery, which we cut at a certain height, and we placed the mesentery promptly on a slide, and examined it with the necessary powers. As the portion of intestine continued to contract for some time it drove the blood into the portion of mesentery examined, and for five minutes or more we could very satisfactorily observe persistence of the circulation in the finest capillaries. The Bacteria and blood nodules travelled through the vessel intermixed and with equal freedom. The Bacteria attached themselves neither to each other, nor to the walls of the vessels, nor to the globules. One would hardly suspect this who had only seen them in the body of a dead animal or in cooled blood, rigid, intermingled, and absolutely motionless. Nevertheless, as proofs of this impediment of the circulation, have been adduced the engorgement of the spleen, liver,

lungs, congestion of the intestinal mucous and blood extravasations, especially in the serous membranes. And credible observers have, by microscopic examination, proved obstruction to the circulation due to blocking of the capillaries by numberless Bacteria."

M. Colin does not consider these facts conclusive, for the rapid engorgements of organs, hæmorrhages, &c., are not always well marked in animals which have died from charbon, and sometimes such lesions are wanting, and because in examination of the omentum and mesentery many difficulties in observation give rise to numerous liabilities of error. In opposition to this view he cites the above experiment, which is easy to repeat, and also such observation as the following :—The blood does not become equally loaded with Bacteria in all animals, the blood of adult animals whose charbon lesions are almost completely localised in the lymphatic glands contains very few Bacteria. In septicæmia death occurs as in charbon, "although the fine granules, micrococci or Bacteria germs, and the few septic vibriones present, cannot appreciably impede the circulation." Also M. Colin believes that he has seen direct proof that the capillary circulation persists in charbonaceous animals for a long time after the period of great multiplication of Bacteria in the following experiments:—He opened the jugular and the carotid of rabbits affected with charbon just when death is about to supervene, and also of other rabbits in good health. The quantity of blood which escaped was in each case very nearly the same, but later in the dying animals it undergoes diminution by a fifth or fourth, which may reasonably be put down to weakening of the heart's action. So the death does not in cases of charbon result from mechanical impediment to the circulation. Does it then result from asphyxia? The *post-mortem* appearances of the blood are somewhat those found in asphyxia, but during life the blood is of its ordinary red colour until the Bacteria occur in it in considerable numbers, then its redness slightly lessens, and it is only just before death that it becomes very black. This is, indeed, a commencement of asphyxia, but we cannot yet feel certain how it can produce death. M. Colin does not think it can be attributed to Bacteria, for the same condition is in this disease observable in the lymphatic ganglia though they contain few Bacteria; also it is observable in septicæmia, the characteristic vibrio of which is destroyed by oxygen, and because it shows itself slowly. On the other hand, the colouration may well be attributed to the red corpuscles, which have lost their power of fixing oxygen, as seems

proved by the fact that a thin exposed layer of charbon blood does not assume the bright red colour. With regard to the theory of considerable reduction of the internal temperature; the duration of the cold stage which succeeds the febrile "is two, four, or eight hours most frequently. Occasionally, especially in mild cases, it is prolonged to from twelve to fifteen hours." The reduction in temperature is not generally considerable, 3° to 5° , as the experiment of the author shows, consequently we cannot admit that a charbon patient dies "because his temperature falls, on an average, to 35° ." M. Colin considers the three precited causes can hardly produce deaths by their combined influence, for generally the number of Bacteria is too small to impede the circulation, to deprive the corpuscles of oxygen, or to arrest the production of animal heat. He considers the real cause of death is alteration of the blood, which renders it unfit for nutrition of anatomical elements. Examination of the liquid shows that it has become remarkably modified, and probably some day we shall be enabled to demonstrate "whether the blood has only negative characters, or whether it is really poisoned either by toxic Bacteria or by a product which they generate, or which bears some other relations to them."

M. Toussaint, working at the same matter as M. Pasteur, but from a different point of view, has obtained remarkably similar results. The *Recueil*, of 15th February, gives the following *résumé* of his *mémoire*:—After having traced the history of charbon from the latest researches, among which those of M. Pasteur are most remarkable, the author reminds us that, though Bacteria are capable of very little resistance, and perish at a heat of 50° , or by the action of putrefaction, or of antiseptic liquids, it is not the same with their germs. Their bright bodies, which can resist a very considerable heat, putrefaction, and moisture, and after many years can germinate in favorable media, as cultivating fluids. He believes this fact explains the persistence of charbon in two places or districts which it infests. Also he believes it is now possible to state (1) that charbon is never spontaneous in the literal sense of the word; (2) that for its development it requires that there be inoculation with Bacteria or their spores. In one word the identity in features between charbon and the true parasitic diseases is complete. This is the opinion of M. Pasteur, and is the more readily adopted, for the experiments of that *savant* have been repeated and verified. This view certainly simplifies the study of the cause of charbon.

1. Where and how are the germs of the Bacteria preserved?

2. How do they obtain entry into the systems of infected animals? These are the questions into the solution of which the matter resolves, and which ought to be investigated. The second is most urgent, and its answer should elucidate the first; for if it be shown that the Bacteria enter in such or such a way, a limit will be thus given to examine for their presence in substances related to such way of introduction—food, drink, or air. To direct these practical researches assistance was derived from those made in the laboratory, which have enabled M. Toussaint to trace the course of Bacteria after inoculations by means of the lesions they produce in organs. In a note communicated to the Academy of Sciences, 3rd June, 1878, he says that “the results which I have established enable me to determine in what part of the economy, and by what mode of entry the parasites introduce themselves.” One of his colleagues inoculated a sheep which M. Toussaint examined after death, and he was enabled to determine the part inoculated, though it bore no trace of lesion. These premises with regard to the determination of the way of introduction being settled, M. Toussaint in his *mémoire* describes the phenomena resulting from inoculation from the period of incubation until death. He notes the multiplication of the Bacteria in the subcutaneous cellular tissue, the irritation which their presence causes, the serous exudation which results, and which is a medium favorable for their germination; finally, their localisation for a certain time. Then their passage through the lymphatics, the irritant action which they exert on neighbouring glands, resulting in the complete obliteration of their structure, and after that their passage into the blood. M. Toussaint, from his researches, attributes a very marked inflammation producing a tendency to Bacterids, which is more or less marked according to the organisms invaded, being very active in the dog, horse, and ass, less so in the sheep and rabbit. This phyllogenous tendency determines rupture of the capillaries at various points, and causes symptoms of very intense pain. These ruptures give rise to deep-seated, true inoculations, which are related to the lymphatic glands in the same way as experimental inoculations. In the rabbit and sheep since the inflammatory action of Bacteria is but little marked, after death they are found only in the blood-vessels, “and in those glands alone which are situated on the course of the lymph vessels coming from the point of inoculation.” These well-marked experimental results give M. Toussaint the one by means of which he has been enabled to ascertain in animals which have recently died from charbon, or better,

in animals slaughtered when manifesting the first symptoms what lymph glands are invaded by Bacterids. Ascertaining this fact informs us that inoculation occurred at the part of the body whence the lymph vessels of these ganglia come. The season was not favorable to the development of charbon, so M. Toussaint could not, as he wished, assist in the development of the disease, and could only examine animals which had been dead for some hours. In twelve sheep and two calves examined *post mortem*, the Bacteria were first proved to be in the blood. M. Toussaint, after removing the skin with care, examined the lymphatic glands, commencing with those of the limbs and trunk, or with those of the splanchnic cavities. This examination, conducted with the aid of the microscope, showed which glands were affected and which unaffected. In eleven of the twelve sheep the particularly characteristic lesions resulting from the presence and the action of the Bacterids, were observed in the glands which receive the lymphatics of the tongue and the pharynx, and consecutively in the prepectonal and prescapular glands. He in every case found healthy visceral glands. "I can thus affirm," he says, "that in eleven out of the twelve cases examined, the spores or the Bacteria penetrated by the mouth or by the pharynx." He expresses his astonishment that the marked characters and frequency of the lesions of the pharynx and of the neck escaped the attention of former observers. Similar lesions were found in similar situations in the two calves, but in one case only one side was affected, whence M. Toussaint affirmed inoculation of only one side of the mouth and pharynx had occurred. In the twelfth sheep lesions were met with only in the right popliteal gland, which implied in this case entry of Bacteria by the right hind limb. Success did not attend examination for the exact point of inoculation.

M. Toussaint agrees with M. Pasteur as to the nature of the wounds of the mouth through which inoculation occurs, for he found that experimentally puncture of the *frænum linguæ* sufficed to produce a point for inoculation; he has always obtained the same results. The lesions of the so-called "spontaneous" charbon are identical with those of the experimentally produced form of the disease. The second question, "Where and how are the germs of Bacteria preserved?" neither M. Toussaint nor M. Pasteur has resolved, for this necessitates long and laborious work, since the Bacteria spores, though Bacteria themselves, have no specific feature which will allow of their recognition among the numerous allied species which exist dormant on the smallest blade of grass in

all decomposing matters, and even on dried earth ready to revive on the least application of moisture. There is only one test for them, to pass them through the animal organism by repeated inoculations; such inoculations having been successful, it would be then necessary to attain their invariable reproduction and to determine the wanderings by means of which the Bacteria arrive at the positions and the conditions in which they are found. M. Toussaint augurs well for his success in this difficult matter from his satisfactory progress hitherto. M. H. Bouley shrewdly suspected the water of a particular pond of containing the Bacteria which had ceaselessly ravaged a particular farm, he considered this pond a kind of cultivating solution. He had some of its water carefully selected and sent to M. Pasteur. That gentleman desires to test his theories as to hygienic measures; he says, "Leave everything as it is; remove from the food everything which may injure the animals, especially in the mouth; macerate what is hard, allow it to ferment every day, or more frequently if necessary; dress the interior of the mouths of oxen and horses with a solution to promote cicatrisation, as chlorate of potash and perchloride of iron, but preferably the former. Give the chlorate of potash to the sheep in their water, for it would be laborious to dress each of them; this means might do for larger animals. Wash the eyes and nose with the chlorate of potash solution."

The question which was discussed at the fifth sitting of the *Congrès National Vétérinaire* was that of Associations. There was as complete as possible general agreement on the principle, but some difference of opinion as to means of application. MM. E. Thierry, Violet, Fleury, supported the scheme of a general Association, established on the same basis as the Association of Physicians, which comprehends all France, and has already lasted for twenty-five years. MM. Benjamin, senior, and C. Leblanc expressed a fear, based on the insuccess of their attempts, lest a general association similar to that of the doctors, might not be sanctioned for political reasons; and, wanting such an association, than which they could not have asked a better had it been possible, they proposed to form another, as comprehensive as possible, under the title of *Friendly Association of former Pupils of Alfort and Lyons*. Though this association would not include pupils of the three schools of France, it is so because if thus constituted it would realise truly the General Association of French Veterinarians, which the Administration does not consider permissible, at least did not when MM. Benjamin and Leblanc moved in this direction. The sus-

ceptibility of *M. Griolet*, of Toulouse, was ruffled by this project, the intention of which he disregarded in spite of the explanations by which its authors have justified it; he protested with great energy against an exclusion which to him would seem to imply, whatever might be said, the superiority of pupils of Toulouse, in respect to those of the two other schools. "Let there be three friendly associations, or one only, and not this unjust system by which two schools would be associated and the third left in the cold."

M. Quivogne to these systems opposed an original scheme, which seemed to him to possess all the advantages and none of the disadvantages of them. The object which he proposed is support of the Association, of which he has conceived the project for administrative protection by rendering it completely independent, and leaving to him the full control of its welfare. As we shall publish *in extenso* shortly the speech of *M. Quivogne* in support of his scheme, we will abstain from analysing it here, and we will also abstain from giving an opinion on the value of the system. The question is very complex, and I confess I am not yet in a position to discuss it. But, with this reservation, we may say that *M. Quivogne*, at the Congress, supported his opinion with such convincing warmth that he obtained a unanimous vote. Accordingly, *M. Quivogne's* scheme for association was adopted by the assembly, and expressed in the vote, "That veterinarians be united to form in each district associations of providence and aid similar to that which exists in the east and south-east of France, and that as soon as possible all these societies shall place themselves in communication by delegates, who will fix the amount of an uniform and moderate subscription for the whole of France.

MM. Knoll, Mégnin, and Boutet have been named Chevaliers de Legion d'Honneur. The good work which we know these gentlemen have done makes us appreciate the honour which has been so deservedly conferred upon them.

M. Neumann and *M. Violet* have been officially appointed Chefs de Science of the second class, and have been attached, the former to the Chair of Hygiène and Zootechny of the Toulouse School, the latter to the Chair of Clinical Studies at the Lyons School. By an edict of the 1st of February was originated the post of *Répétiteur* at the veterinary schools, and three gentlemen were appointed to this position. *M. Mallet*, of the Toulouse School, to the two Chairs of Anatomy and Physiology at Toulouse; *M. Seguin*, of Alfort, to the Chair of Physics and Chemistry at Lyons; *M. Fuchs*, of Alfort, to the Chair of Natural History and Materia Medica

at Alfort. *M. Bouley* promises us some remarks on the reason and aim of the institution of these new posts.

At the meeting of the *Société de Médecine Vétérinaire Pratique* of 12th February, *M. Rossignol*, of Melun, made known the mode of working with the *thermo-cautery* of *Paquelin*, and the results of his experiments on cauterisation with this new apparatus. "I owe to *M. Merelle*, of Lagny, thanks for having been able to study the use of the thermo-cautery, and to make some experiments with it, which seem to me conclusive. That gentleman deservedly praised the new instrument. We have only to use it to be struck with the advantages it offers to veterinarians. By means of it all cauterisations, but especially those with moist and penetrating points, may be performed. I shall show you the working of this, and hope you will be assured of its value. Its construction is based on certain properties of platinum, which metal, when raised to a certain temperature, becomes incandescent if it is placed in contact with a mixture of air and of hydrocarbonaceous vapour. We throw into a previously heated hollow cone of platinum the vapours in question. The instrument becomes red hot at once, and constantly renews its heat, and so does not become cold at all during the operation. According to the relative proportions of the vapours will be the temperature of the platinum cone. A substance in daily use, and easily procurable, *essence minérale*, will conveniently furnish the necessary hydrocarbon. So the *Paquelin apparatus* is composed of—(1) a true cautery; (2) a flask for the rock oil; (3) a blower; (4) an alcohol lamp. The cautery is of two parts—the platinum cone, and a wooden canaliculated handle. The former is composed of a platinum plate, which may assume various forms. I show you one corresponding to our pointed iron, and also another, useful for needle cauterisation, similar to the instrument of *MM. Bianchi, Lenek, and Foucher*. The cone is placed ending upon a tube of metal, which is pierced near its free extremity by a trough for the passage of the products of combustion. It contains in its interior another tube, which is fenestrated at one extremity, which meets the platinum cone, and at the other is terminated by a passage with a female screw. The wooden handle also has a canal, and this receives a metallic tube, which bears at one of its ends a passage with a small screw, and at the other a slight seat-like convexity. The flask is closed by a caoutchouc cork, which is traversed by a metallic tube, which bifurcates on emerging from the cork. One of its divisions receives the extremity of a caoutchouc

tube, which is fitted by its other to the seat of the handle ; thus it seems to bring the flask in communication with the cautery tube. The other division similarly receives a caoutchouc tube, 40 or 50 centimètres long, which terminates by two dilations, about the size of a large pear. One of these, which is surrounded by a net, acts as an air reservoir, the other as a 'bellows.' We have in fact a double opening bellows. In working the apparatus I warm the end of my cautery in the flame of the alcohol lamp for two or three minutes. You see that if I now press in the least on the 'bellows' the air pushed into the flask vaporises part of the mineral essence, and the gaseous mixture passes into the platinum cone. Increased pressure causes red heat or white heat of the cautery. This blowing may be easily managed. I have fired with this instrument with ordinary or penetrating points six times. On animals standing or cast these have done well. The cautery, however, is too large, and is too costly, but the maker, M. Collin, will probably be able to correct these disadvantages."

RETENTION OF A DEAD FÆTUS IN A COW, ASSOCIATED WITH A SECOND IMPREGNA- TION AND GESTATION.

Communicated by GEORGE LEWIS, M.R.C.V.S., Monmouth.

ON Sunday (afternoon), March 9th, of this year, I was requested to attend at the Home farm of J. A. Rolls, Esq., upon a short-horn cow, ten years old. She was at her full time for calving, and had had parturient pains for some hours ; but as she made no progress the bailiff introduced his hand, and finding only the tail of the calf I was sent for. I found labour to be complicated with tympanitis of the rumen and diarrhœa. The evacuations from the bowels were not very thin, but of a highly offensive nature. I inquired concerning the food she had partaken of, or, as to any injury she might have received, which could have produced these symptoms, but failed to elicit any cause for them. I was informed, however, that she had thus suffered, more or less, for the past week, and would sometimes become bedewed with perspiration. The foetal membranes were ruptured and the os uteri fully dilated, but the foetus was dead. It could, however, only have been so for a very few hours, as the secretions were natural, and

there was no offensive smell nor any generation of air within the fœtus, which so often exists when the umbilical cord has been ruptured for any length of time, *e. g.* for a few days, and the os uteri only *slightly* dilated. In this case the cord, however, was broken. Delivery was effected in a short time of a fine and fully-developed male calf. Examination of the uterus showed it to be in a healthy state. No other fœtus appeared to be present. No trace of blood or sanguineous effusion of any kind existed, and the membranes came away shortly after delivery. Placenta healthy. Udder soft, and not much secretion of milk. I ordered opium and sulphite of soda at intervals, the latter to be repeated, if necessary, in accordance with instructions given. This had the effect of relieving the tympany, and the cow partook of a little mash and appeared to be doing well.

Monday, March 10th.—The appetite, which for the past week had been capricious, was now bad. She partook of but little food ; tympany worse ; no secretion from vagina or straining ; in the evening she appeared to be better.

Tuesday.—I saw her for the second time, the symptoms were intensified. An examination *per vaginam* showed the cervix uteri to be fairly closed and healthy to the feel, but upon withdrawing the hand a small quantity of a thin secretion, as though it consisted of whitish clay mixed with water, and of an inexpressible bad odour, followed. I expressed an opinion that she would die, that there was absorption of some morbid poison into the system, but from what cause I could not undertake to state. She died Thursday (morning), March 13th.

Post-mortem examination.—The udder.—The whole of the glands contained milk. Those upon the near side were filled with healthy-looking milk ; *but those upon the off or milking side* contained a secretion which stunk so badly, in fact, that I at first thought the animal must have bruised herself, and that sphacelus had occurred as a consequence. Further examination, however, proved such not to be the case, for it was *the secretion alone which emitted the offensive odour.*

Abdomen.—All the viscera, except one to be described, were healthy. The left cornua of the uterus was also healthy, and properly contracted in accordance with the time elapsed. The maternal cotyledons were also well developed and healthy in appearance.

The right cornua had a small opening leading to the cervix, through which continued to gravitate the same abominable secretion before described. Upon laying open

this portion of the uterus the remains of a fully-developed foetus having breech presentation were found. The bones, even the long bones, such as the femur, tibia, &c., having undergone *a complete process of maceration*, were entirely denuded of their periosteal covering, and their epiphyses separated, the whole having a blanched appearance. All the internal organs of the foetus were dissolved, as were also the membranes which had once surrounded it. Not a trace of them was left, all being dissolved into a few quarts of horrible stew, in which were found the hoofs *very large and firm*. There were *four incisor teeth cut and the next pair* was appearing.

The coats of the cornua were greatly attenuated. Its interior appeared as though it had been lined with a piece of very thin, half-dressed, semi-green leather; I know of no better description for it. Over its entire surface it had a harsh or hard feel. The remains of the maternal cotyledons were still visible, and resembled so many shrivelled-up stars or asterisks. Around several of them were patches of hair adhering to the surface of the uterus.

The cow was served three times for calf of 1878, and became impregnated by last service of June 16th. She calved April 11th, 1878. The calf continued to suck until it died in the following September of, what I then diagnosed to be congestion of the lungs. It was a small heifer calf, did very indifferently, and always seemed weakly.

She was served for calving in 1879 *once only*, viz. June 2nd, 1878, and I attended her on the 9th inst. The quality of the milk while rearing the calf which died was of a very poor quality, although previously her milk was very good. The calf of which I delivered her had *no incisor teeth*.

THE RECENT FATALITY AMONG IN-LAMB EWES.

By W. STANLEY CARLESS, M.R.C.V.S., Lincoln.

I SEE by the Report of the Veterinary Committee of the Royal Agricultural Society for last month that Professor Axe has been investigating a disease which affects in-lamb ewes.

I notice that in the report he says, "Down sheep suffer most from the malady." This may be so; but we have lost a large number of the Lincolnshire breed, the symptoms

being exactly the same as described. I have made many *post-mortem* examinations, and found in every case that the ewes are pregnant with two or three lambs. The farmers who have given their ewes plenty of "trough food" while on turnips have never had better success; but those who have done the ewes badly have suffered severely.

The treatment I have adopted is to have the ewes removed from turnips and supplied with plenty of good trough food mixed with which is some tonic medicine. I have found that the ewes have plenty of fat about them, although the blood is so impoverished. I should add that it was at the commencement of the lambing season that we had the greatest losses.

If you think that this confirmatory statement will interest the readers of the *Veterinarian*, I shall be pleased for this short communication being inserted in your next issue.

PHYSIOLOGICAL TREATMENT OF VISCERAL INFLAMMATION.

By NICHOLSON ALMOND, Veterinary Student Royal
Veterinary College.

THE great mortality attendant upon inflammation of the various viscera is well known to all students of medicine, and any facts, old or new, which when applied may tend to reduce the percentage of deaths from this cause would be welcomed by all who take an interest in their profession.

The close relations existing between physiology and pathology are now fully recognised, and to insure the consideration of any particular line of treatment by those whose consideration is of value, it is necessary to show that the conclusions arrived at are based upon observed facts, experimental or otherwise; and the rational outcome of accurate reasoning.

Fortified by the consciousness that success will attend treatment having such a basis, the practitioner confidently applies it, and with the happiest result; without such a basis there is no pleasure in resorting to treatment at all.

In the following lines it is endeavoured to show that the treatment recommended is based upon the undoubted facts of physiology and pathology.

The treatment is not new, for in a partial manner it has

been applied from the earliest times, yet for the want of the rational basis which I have shown in the following paper, it has not commanded that universal adoption which the writer is persuaded it has in store for it, and deserves.

It has long been supposed, and recently it has been demonstrated, that there exists between the cutaneous and muscular systems on the one side and the viscera on the other a direct antagonism as regards their blood supply. To induce a rapid circulation in the skin and muscular systems is to cause a corresponding drain upon and proportionately an anæmic condition of the viscera; and, on the other hand, to drive the blood from cutaneous and muscular systems is to cause a congested condition of the viscera.

This antagonism appears to depend upon the different degree in which those systems are acted upon by a discharge of contractile influence from the vaso-motor centre such a discharge affecting the vessels of the viscera in a much greater degree than those of the cutaneous and muscular systems, the skin being second in degree and the muscular system in the least degree affected; the difference between the cutaneous and muscular systems being so little that they may be classed together as compared with the viscera.

This difference of response is due to the fact that the splanchnic nerves are composed wholly of fibres which convey only contractile influence, while those distributed to the muscles and skin are principally dilating fibres.

It is found that the excitation of a sensory nerve produces by reflex action through the vaso-motor centre dilatation of all the vessels in the region to which it is distributed, and contraction of all other arteries of the body.

The contracting power of the arteries of the viscera being greater than that of the arteries of the muscles and skin overcome them, and hence it is found that although the vessels of the irritated part are larger and the flow of blood through them more rapid than at other times, the blood pressure is greater, which extra pressure is due to the contraction of the vessels of the viscera.

The antagonism demonstrated by physiologists is fully confirmed by pathological observations, which show that the coldness of the superficies of the trunk and the extremities is in inverse ratio to existing internal heat during visceral inflammation.

Recognising the antagonism that exists between the exterior and viscera of the body, it is very clear that it will be advantageous to have recourse to the inducing by some means or other increased circulation in the superficies whenever

inflammation of any internal organ exists, and the benefit may be expected to be coextensive with the cutaneous circulation initiated by a mild stimulus, that is to say, we should not be satisfied with the application of a stimulant over the region of the internal organ affected, as has hitherto in some instances been recommended, nor, in my opinion, should the selected stimulant be such as to inflame the dermis, thereby producing stasis and the concomitant reduction in quantity of blood circulating in the part, and withal making the parts tender, causing nervous irritability and discomfort to the invalid, conditions which should be most studiously avoided. But the stimulant should be such an one as can be applied again and again as often and as long as required, viz., until either the symptoms abate or the animal succumbs to the disease.

All these qualities are found in cold-water packing; thereby the necessary stimulus is given to the sensory nerves, which by reflex action cause the vessels to dilate, and that remarkably rapid flow of blood through them, to which special attention has already been directed, and a proportionate drain upon the inflamed viscera with contraction of their vessels, as shown by the accompanying increase in the blood pressure.

These results are purely physiological, and therefore while its action continues the animal experiences from it no influence except that which is beneficial; and in addition to these excellent qualities it possesses that of extensive application, it being practicable to apply this method at least to the whole of the trunk; and the limbs being bandaged, they of course would participate in its general curative influence.

Lest some of your readers should be unaware what is intended to be conveyed by the term "cold-water packing," it will, perhaps, be as well to give a brief description of it.

The means whereby the cold water, or, if it is preferred, *very weak* solution of ammonia, is applied is by bands of spongio-piline, which consists of felt, coated externally by a waterproof covering to prevent a too rapid evaporation, which bands should be from fifteen to eighteen inches wide, sufficiently long to pass quite round the body, and sufficiently numerous to envelop the trunk; these bands are saturated with water, or the solution above referred to, and the superfluous fluid having been pressed out, applied to the body, the shape of which they readily take; they should be strapped close, and only require resoaking when approaching to dry-

ness, after which they should be again immediately applied ; only one should be taken off at a time.

The fluid soaked up by the spongio-piline soon takes the temperature of the body, and acts continually as a mild stimulant to the peripheral nerves of the skin, whereby its beneficial influence is exerted. It rarely requires to be wetted oftener than night and morning.

Single bands, about fifteen inches wide, have been used with great advantage and success in chest affections by various eminent practitioners, but if my reasoning is correct they have only had a partial advantage, for it is herein shown the advantage is in proportion to the extent of surface stimulated. Its application has all the advantages of warm fomentations, without the disadvantages of intermittence.

In my opinion it acts exactly as the fresh sheep skin does when applied to the loin or other parts of animals.

It may easily be applied locally, and would supply the moisture and retain the warmth to which the poultice owes its beneficial influence, and in many other ways it should be utilised for the relief of domesticated animals.

It will be seen that the relief which most impartial observers agree follows the application of blisters when internal inflammation exists is in harmony with the views herein set forth, and the opinion that they are only of a temporary character confirmed ; and, further, it may be inferred that the injury which they inflict more than counterbalances their beneficial influence, and it is contended that the treatment herein preferred is such as to maintain continuously the first and only beneficial effect of such agent without their baneful influence following in its wake.

GLANDERS AMONG FRENCH CAVALRY HORSES.

A SEVERE epidemic of glanders has broken out in the Cuirassiers at Lyons. No less than £16,000 is stated to be the value of the horses died or killed. General Farre, commanding, has sent the regiment away to Valbonne.

Pathological Contributions.

CATTLE PLAGUE.

CATTLE PLAGUE is still very prevalent in Russia.

In Austria-Hungary the disease appears to be on the increase, and is reported to exist in nine districts in Galicia, eight in Bohemia, two in Dalmatia, one in Hungary, three in Croatia, three in Croatian Military Frontier, five in Sclavonian Military Frontier, and eight in Bosnia.

The German Empire was officially declared to be free from cattle plague on the 6th of last March.

In Turkey, cattle plague is said to exist in the districts of Jassy and Falcin. It has disappeared in the district of Vaslin, but has reappeared in the district of Bacan. A violent outbreak of cattle plague has been reported to have occurred in the whole of the Sandjak of Acre.

With reference to Bohemia the *New Free Press* of Vienna says that the cattle plague is becoming more and more formidable in Bohemia. Several hundred places have been attacked by the disease. They are surrounded by a military cordon, and as far as possible prevented from carrying on intercourse beyond its boundaries. The loss to the inhabitants of the districts is reported to be very considerable, and is not totally represented by that of the cattle slaughtered. Agriculture is in many places at a standstill, the cattle which serve as general beasts of burden being locked up wherever the disease appears.

PLEURO-PNEUMONIA.

IN the Netherlands during the four weeks between the 23rd February and 22nd March, only eighteen cases of lung disease have been registered. This is a considerable reduction upon the number of cases which were returned during the corresponding period of last year, when sixty-four cases were registered.

THE CONTAGIOUS DISEASES (ANIMALS) ACT, 1878.

RETURN of the Number of Places in Great Britain upon which contagious or infectious disease (except sheep-scab) has been reported to have existed during the week ended March 8th, 1879, with particulars relating thereto,

PLEURO-PNEUMONIA.

| | Farms or other Places. | | | Cattle attacked. | | Diseased Cattle. | | | | Cases which existed in previous Weeks not reported until this Week. | |
|--|--|---|---|--|---------------------------|------------------|-------|------------|------------|---|------------------|
| | Number reported upon this Week which have been previously reported upon. | Number upon which Fresh Outbreaks have been reported to have taken place during the Week. | Total Number reported upon during the Week. | Remaining diseased from the previous Week. | Attacked during the Week. | Killed. | Died. | Recovered. | Remaining. | Fresh Outbreaks. | Cattle attacked. |
| ENGLAND. | | | | | | | | | | | |
| COUNTY.* | | | | | | | | | | | |
| Cambridge (ex. Liberty of the Isle of Ely) | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Chester | 1 | 1 | 2 | ... | 1 | 1 | ... | ... | ... | ... | ... |
| Cumberland | 2 | 1 | 3 | ... | 2 | 2 | ... | ... | ... | ... | ... |
| Essex | 9 | ... | 9 | 1 | 1 | 2 | ... | ... | ... | ... | ... |
| Kent (ex. Metropolis) | 3 | 3 | 6 | ... | 6 | 6 | ... | ... | ... | ... | ... |
| Lancaster | 9 | 1 | 10 | ... | 2 | 2 | ... | ... | ... | ... | ... |
| Leicester | 3 | 1 | 4 | ... | 1 | 1 | ... | ... | ... | ... | ... |
| Lincoln, Parts of Lindsey | 2 | ... | 2 | ... | 1 | 1 | ... | ... | ... | ... | ... |
| Middlesex (ex. Metropolis) | 3 | 1 | 4 | ... | 4 | 4 | ... | ... | ... | ... | ... |
| Norfolk | 4 | ... | 4 | ... | 3 | 3 | ... | ... | ... | ... | ... |
| Northampton (ex. Soke of Peterborough). | 6 | 1 | 7 | ... | 1 | 1 | ... | ... | ... | ... | ... |
| Notts | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Rutland | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Salop | 1 | ... | 1 | ... | 1 | 1 | ... | ... | ... | ... | ... |

[illegible]

FOOT-AND-MOUTH DISEASE.

| | Farms or other Places. | | | Animals attacked. | | Diseased Animals. | | | | Cases which existed in previous Weeks not reported until this Week. | |
|---|--|---|---|--|---------------------------|-------------------|-------|------------|-------------|---|-------------------|
| | Number reported upon this Week which have been previously reported upon. | Number upon which Fresh Outbreaks have been reported to have taken place during the Week. | Total Number reported upon during the Week. | Remaining diseased from the previous Week. | Attacked during the Week. | Killed. | Died. | Recovered. | Remainings. | Fresh Outbreaks. | Animals attacked. |
| ENGLAND, COUNTY.* | | | | | | | | | | | |
| Cambridge (ex. Liberty of the Isle of Ely). | 6 | ... | 6 | 816 | ... | ... | ... | 10 | 806 | 1 | 236 |
| Essex | 2 | ... | 2 | 65 | ... | ... | ... | 3 | 62 | ... | ... |
| Huntingdon | 1 | ... | 1 | 509 | ... | 1 | 1 | ... | 507 | ... | ... |
| TOTAL | 9 | ... | 9 | 1390 | ... | 1 | 1 | 13 | 1375 | 1 | 236 |

FARCY.

| | Horses attacked. | | Diseased Horses. | | Horses attacked. | | Horses attacked. | |
|--------------------------|------------------|---|------------------|---|------------------|---|------------------|-----|
| | | | | | | | | |
| ENGLAND. | | | | | | | | |
| COUNTY.* | | | | | | | | |
| The Metropolis | 2 | 2 | 4 | 6 | 3 | 3 | ... | ... |
| TOTAL | 2 | 2 | 4 | 6 | 3 | 3 | ... | ... |

GLANDERS.

| ENGLAND. COUNTY.* | | | | Horses attacked. | | Diseased Horses. | | | Horses attacked. | | Horses attacked. |
|-----------------------------------|-----|--|--|------------------|-----|------------------|-----|-----|------------------|-----|------------------|
| | | | | | | | | | | | |
| Buckingham | 1 | | | 1 | ... | 1 | ... | ... | 1 | ... | ... |
| Durham | ... | | | 1 | ... | 1 | ... | ... | 1 | ... | ... |
| Hants | ... | | | 1 | ... | ... | ... | ... | ... | ... | ... |
| Lancaster | 1 | | | 1 | ... | 1 | ... | ... | ... | ... | ... |
| Lincoln, Parts of Lindsey | ... | | | ... | ... | ... | ... | ... | ... | ... | ... |
| The Metropolis | 1 | | | 6 | ... | 8 | ... | 10 | ... | ... | ... |
| TOTAL | 4 | | | 10 | ... | 14 | ... | 11 | ... | ... | ... |

TYPHOID FEVER OF SWINE.

| ENGLAND, COUNTY.* | | | | Swine attacked. | | Diseased Swine. | | | Swine attacked. | | Swine attacked. |
|---|-----|--|--|-----------------|-----|-----------------|-----|-----|-----------------|-----|-----------------|
| | | | | | | | | | | | |
| Bedford | ... | | | 6 | ... | 17 | 14 | 3 | ... | 1 | 9 |
| Berks | 3 | | | 1 | 9 | 23 | 30 | 2 | ... | ... | ... |
| Buckingham | 1 | | | ... | ... | ... | ... | ... | ... | ... | ... |
| Cambridge (ex. Liberty of the Isle of Ely). . . . | ... | | | 1 | ... | 1 | ... | ... | ... | ... | ... |
| Derby | 1 | | | ... | ... | ... | ... | ... | ... | ... | ... |
| Essex | 3 | | | 1 | ... | 18 | 5 | 13 | ... | ... | ... |

TYPHOID FEVER OF SWINE—continued.

| | Farms or other Places. | | | Swine attacked. | | Diseased Swine. | | | | Cases which existed in previous Weeks not reported until this Week. | |
|--------------------------------------|--|---|---|--|---------------------------|-----------------|-----------|------------|------------|---|-----------------|
| | Number reported upon this Week which have been previously reported upon. | Number upon which Fresh Outbreaks have been reported to have taken place during the Week. | Total Number reported upon during the Week. | Remaining diseased from the previous Week. | Attacked during the Week. | Killed. | Died. | Recovered. | Remaining. | Fresh Outbreaks. | Swine attacked. |
| ENGLAND, COUNTY.*—contd. | | | | | | | | | | | |
| Hertford | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Huntingdon | 1 | 1 | 2 | ... | 19 | 15 | 4 | ... | ... | ... | ... |
| Leicester | ... | 2 | 2 | ... | 6 | ... | ... | ... | 6 | ... | ... |
| Lincoln, parts of Holland | ... | 1 | 1 | ... | 11 | ... | ... | ... | 11 | ... | ... |
| Middlesex (ex. Metropolis) | ... | 1 | 1 | ... | 9 | 5 | 4 | ... | ... | ... | ... |
| Monmouth | 2 | ... | 2 | ... | 25 | 21 | 4 | ... | ... | 1 | 16 |
| Norfolk | 5 | 4 | 9 | 5 | 40 | 34 | 1 | ... | 10 | 2 | 11 |
| Salop | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Somerset | 1 | ... | 1 | 19 | ... | 19 | ... | ... | ... | ... | ... |
| Suffolk | 4 | 3 | 7 | ... | 37 | 28 | 2 | ... | 7 | 1 | 29 |
| Wilts | 2 | ... | 2 | ... | 4 | 3 | 1 | ... | ... | ... | ... |
| York, East Riding | ... | 1 | 1 | ... | 19 | 14 | 5 | ... | ... | ... | ... |
| „ West Riding | ... | 2 | 2 | ... | 7 | 7 | ... | ... | ... | ... | ... |
| WALES, COUNTY.* | | | | | | | | | | | |
| Glamorgan | 1 | ... | 1 | 1 | ... | 1 | ... | ... | ... | 1 | 1 |
| TOTAL | 26 | 24 | 50 | 34 | 236 | 196 | 39 | ... | 35 | 6 | 66 |

* Counties include such boroughs and burghs as are locally situated within the limits of the Counties, or, if surrounded by two or more counties, then they are included in the county with which they have the longest common boundary. Berwick-upon-Tweed is included in Northumberland.

Veterinary Department, Privy Council Office, 22nd April, 1879.

Facts and Observations.

TRICHINÆ IN PORK.—According to a report just issued by the Prussian Minister of Agriculture the number of pigs slaughtered in the Kingdom of Prussia in 1878 was rather more than two millions. Of this number the official inspectors of meat found that one in every 2,800 was affected with *trichinæ*. This showed a considerable improvement on 1877, when as many as one in every 2,000 pigs was suffering from *trichinosis*. Trichinæ had also been discovered in American salt pork in the smoked uncooked sausages of Brunswick. There had been several outbreaks of the disease among the inhabitants of several provinces and cities where uncooked ham, bacon, or sausages, or underdone pork had been eaten. The frequency of this dangerous and agonising malady has continued to engage the attention of the Imperial Government of Germany, which intends shortly to bring before the Imperial Parliament a measure to ensure a more stringent microscopical examination of all pigs slaughtered. Besides trichinæ more than 5400 of the pigs examined were found to be subjects of measles—*Cysticercus cellulosæ*.

“The last number of Eulenburg’s *Quarterly* contains a statement, compiled from official sources, as to the results of the compulsory examination of swine in Prussia for trichinæ and measles during the course of the year 1877. The total number inspected was 2,057,272, and of these 701 were found to be more or less infested with trichinæ. More than 5,400 of the pigs examined were subjects of measles.”—*Live Stock Journal*.

THE PROPOSED DICK MEMORIAL.—A meeting of the subscribers to this memorial was held on April 9th, in the offices of Messrs. Currer and Cowper, S.S.C., Edinburgh, at which it was remitted to a Committee to take steps with a view to raise the funds necessary for carrying out the object aimed at, the foundations of one or more Bursaries in connection with the Dick College.

CASES OF EXTRAORDINARY FECUNDITY IN EWES.—The prolific half-bred ewe belonging to Mr. John Cookson, of Meldon Park, has again this year produced four fine lambs, making in all thirty-seven lambs in seven years. She has had five times four and twice six lambs, all healthy and good.

A ewe belonging to Mr. John White, Eaglesfield, dropped two fine healthy lambs the other day. The ewe is 17 years old, and has presented to its owner no fewer than thirty-six lambs, twelve times a pair, and four times three.—*North British Agriculturist*.

THE VETERINARIAN, MAY 1, 1879.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

CAN PLEURO-PNEUMONIA BE COMMUNICATED BY
MEDIATE CONTAGION?

IN the recent issue of the *Journal of the Royal Agricultural Society* an interesting report is published relative to the inquiries which have been undertaken by Dr. Burdon Sanderson, at the Brown Institute, for the purpose of elucidating certain obscure points in the pathology of pleuro-pneumonia.

It will be within the recollection of our readers that at the time of the commencement of the investigation, which was conducted under the auspices of the Royal Agricultural Society, we pointed out that the main point in dispute was the communicability of pleuro-pneumonia otherwise than by association with a diseased animal. The literature of the disease, English and Continental, the former mainly a more or less exact transcript of the latter, contains many vague general allusions to the extension of the affection by the agency of various products of diseased animals, portions of lungs, hides, manure, urine, and fodder, which has been contaminated with the excreta from sick cattle. Failing to discover in these allegations anything more than the mere outcome of that system of repetition which appears to be a necessary part of the art of making books, we appealed to our observations, which are coextensive with the existence of pleuro-pneumonia in this kingdom; and we did not on this basis hesitate to state our conviction that the disease differs from other known contagia, in the circumstance that it cannot be propagated by means of the morbid products, as foot-and-mouth disease, sheep-pox, glanders, and farcy, for example, can be with absolute certainty.

At the beginning of the inquiry it was proposed to obtain authority from the Privy Council to move diseased animals to the Brown Institute for observation; we pointed out, however, that this course would vitiate the results of the principal experiments, and it was agreed that a certain number of healthy animals should be kept sufficiently long to insure that they were free from previous infection, and then an effort should be made to induce pleuro-pneumonia by any means short of contact with a diseased animal. We need not follow the course of the experiments which are described in detail by Mr. Duguid; it is enough to say that the results were negative

as they were in similar experiments which were made many years ago in our own investigations.

A second object was kept in view by the Agricultural Society—the testing of the value of inoculation as a preventive of the natural attack. In this respect Dr. Burdon Sanderson's experiments are favorable, but he admits that they have not been sufficiently extensive to justify any sweeping conclusion, and he suggests that further inquiry is necessary in this direction to complete the investigation, which he regrets was prematurely arrested by the recent legislation.

The fact is that under present circumstances, healthy animals cannot be moved into an infected place, but it must be remembered that an infected place includes a large number of cattle which are free from disease, but are necessarily shut up for at least fifty-six days. Under such circumstances it would appear that every facility is offered for testing the value of inoculation on a large scale, and if the plan of operation which Dr. Burdon Sanderson advocates, that of venous injection, be as free from risk as it has been in his and Mr. Duguid's hands, the value of the alleged preventive might be effectually tested without cost or danger.

Extracts from British and Foreign Journals.

IRISH CATTLE AND DISEASE.

FROM a parliamentary return moved for by Mr. Egerton Hubbard, it appears that the number of cattle in Ireland in the year 1877 was 3,996,027; of sheep, 3,989,178; and of swine, 1,467,999. The numbers of cattle and sheep were below those of the four previous years, each of which showed a decrease as compared with its predecessor; whilst the number of swine exhibited in each of the years a substantial increase. The number of cattle exported in 1877 was 649,873; of sheep, 631,159; and of swine, 585,427. The cattle export showed a decline when compared with 1873 or 1876; the export of sheep was in excess of the export in 1873, but lower than in either of the three following years; but the export of swine showed a large increase over the numbers in either of the four previous years. As compared with the total export in 1873 this increase was 221,056. In 1875, 379 animals were seized or detained on account of being affected with disease, chiefly foot-and-mouth disease, but in 1877 the seizures or detentions had diminished to 164, 106 of which were sheep affected with scab and 56 swine with foot-and-mouth disease. In the year 1877 pleuro-pneumonia was

prevalent in Ireland to an extent beyond comparison with any of the previous four years, no fewer than 1251 outbreaks, affecting 2379 animals, of which 1984 were slaughtered, being reported. Sheep scab was also higher, 124 outbreaks affecting 1887 animals being reported. No outbreak of cattle plague came under observation during the five years. In 1875 the enormous number of 31,855 outbreaks of foot-and-mouth disease were reported, 355,823 cattle, 72,581 sheep, and 18,651 swine being affected. Of the cattle 1476, of the sheep 178, and of the swine 1885 died. In 1877 the number of outbreaks of this disease reported was only 91, the number of animals affected being about 300.—*Globe*.

GLANDERS. CASES OF COMMUNICATION OF THE DISEASE TO THE HUMAN SUBJECT.

REPORTS have appeared in the public papers of this disease having been conveyed to *two sisters*, the daughters of a horsekeeper, residing in Colville Mews, Kensington, both of whom had died. It was stated in evidence before the Coroner, for Central Middlesex, Dr. Hardwicke, who held an inquest with reference to the death of Emily Hulbert, aged 18, residing with her father and other members of the family over stables, No. 16, Colville-mews, Kensington, and who had expired in St. Mary's Hospital, by Henry Hulbert, her father, that he had been in the employ of Mr. Bacon, the owner of the stables, as horsekeeper, and with his family, of whom deceased was one, resided in rooms over the stables. One of his children had died a few weeks ago, and the medical men had given an opinion that its death was caused by glanders.

In January last a brown mare was taken ill on the 6th, and killed on the 8th; and subsequently a brown horse was taken ill, and was removed to another stable, where it had died. Another horse was killed in March, and during this period some had been taken away and led along the streets and others killed.

Charles Milestone said he was a licensed horse slaughterer, and during the present year he had purchased from Tedder, a witness, about eighty horses at prices varying from 30s. upwards. He did not know whence they came. Some of them were diseased while others were sound, but worn out. In reply to questions by Dr. Dudfield, the medical officer of health for Kensington, the Coroner, and others, the witness stated that the carcasses of glandered animals were sold for cats' and dogs' meat, although under the Act of 1874 their bodies were to be buried and covered with quick-lime, and the skin so slashed as to be unable to be sold. The fat

was melted down, but what became of it he could not say. A juror: Does it go to the fried-fish shops? Witness could not say, but there was a great demand for it.

Dr. Dudfield read Clause 31 of the Contagious Diseases (Animals) Act, which enacted that the carcasses of all diseased animals should be destroyed.

Mr. Bacon, the proprietor of the stables, said that he had twenty horses which were used in cabs, the majority of which got knocked up by being overworked by the drivers.

The jury ultimately returned the following verdict: "That the deceased, Emily Susan Hulbert, was found dying and expired from the mortal effects of glanders, contracted at No. 16, Colville Mews, Kensington, her sister having previously died from the same disease; and the jurors are further of opinion that the provisions of the Contagious Diseases (Animals) Act of 1878, with reference to the outbreak of glanders and to the treatment and exposure of the carcasses of horses suffering from such disease, have not been duly carried out; and it further appears that the provisions of the Metropolitan Slaughterhouses Act of 1874 have been violated; and the jury further desire that the facts given in evidence shall be brought before the Privy Council, and such steps be taken as to avoid if possible the occurrence of such accidents for the future."

BROWN INSTITUTION—REPORT OF THE EXPERIMENTS ON PLEURO-PNEUMONIA.

THE following is the concluding report on the experiments at the Brown Institution on Pleuro-Pneumonia, by J. Burdon-Sanderson, M.D., LL.D., F.R.S., late Superintendent of the Brown Institution, extracted from the current number of the Royal Agricultural Society's *Journal*.

The inquiries which were undertaken in 1876, relating to the origin and nature of pleuro-pneumonia, and to the use of inoculation as a means of preventing its spread, having now been brought to a conclusion for the present, in consequence of the legislative difficulties which stand in the way of further experiment, I beg leave to submit to the Council the following statement of the results of our labours.

The circumstances which led to the inquiry were set forth in a preliminary report which was published in 1876. At that time no experiments had been made, but our first batch of experimental animals had been purchased, viz. two cows, two calves, and four other animals of different ages. They had been kept at Wandsworth Road for three months—a

time which we considered sufficient, but not more than sufficient, to afford security against previous infection. I then stated that we should exclude any living source of infection from our premises, but would "try, in succession, every channel of mediate contagion known to us, using in our experiments all that deliberation and caution which the consideration of the importance and difficulty of the inquiry enforced upon us."

Before proceeding with the narrative of our experiments it will, I think, be useful to state somewhat more fully than has hitherto been done, the nature of the practical questions which we have had in view, some of which have now assumed a greater importance than they had at the outset. Our objects have been (1) to ascertain by experiment by what different ways a healthy animal can be infected; (2) to ascertain whether inoculation is practically useful; and (3) to discover a way of inoculating an animal without risk.

With reference to the first point, the opinion generally entertained is, that a healthy animal may get pleuro-pneumonia either directly from a diseased animal, or indirectly by being brought into relation with its hide or carcase, or with persons or things that have been in contact with it body. Thus, Mr. Fleming, the author of the well-known *Manual of Veterinary Sanitary Science*, expressed his belief very decidedly in 1875, that "infection may occur through the medium of forage, straw, &c., which have been soiled and breathed upon by infected cattle, by the utensils which have been used with them as well as by the persons who have attended to the sick," and has since that period expressed the same opinion in still stronger terms. An opposite view had, however, been guardedly promulgated by a very high authority. In the excellent article by Professor Brown on the contagious and infectious diseases of animals, which appeared in the tenth volume of the *Journal*, the author said, that "so far as his own observations had enabled him to decide, the disease is only communicated by the actual contact of a diseased animal with a healthy one, and that it is at least exceedingly probable that the mode of communication is by the inhalation of the breath of the diseased subject."

With reference to the second question, that of the utility of inoculation, opinions are also, as needs scarcely be said, much divided, although the majority are in its favour. One of the strongest arguments against it is founded on the acknowledged fact, that although inoculation as ordinarily practised produces very severe effects, yet the effects are neither the disease itself nor any modification of it. It has,

indeed, been alleged by some authorities that actual lung disease can be generated by the insertion under the skin of bits of diseased lung; but this inference, which if it were well established would be of great importance, can be shown to be mistaken. The observations quoted in support of it are too good to be true. In most instances, the time which intervened between the inoculation and the appearance of lung disease was far too short; for we have evidence from the pathological inquiries of Professor Yeo, as well as from other sources, that the development of the disease in the lungs requires a very long time, and usually produces no obvious symptoms at all until it breaks out in the acute form in which it is ordinarily recognised. Consequently, the appearance of symptoms within a week or two after inoculation could not reasonably be referred to the operation as their cause; so that we need not hesitate to conclude that the animals in question had been previously infected by other means.

Another statement that has been made with reference to the mode of action of inoculation is equally unfounded, viz. : that although inoculation never produces actual pleuro-pneumonia, yet, that it gives rise, at the place where the morbid material is introduced beneath the skin, to a local disease which is of the same kind as the real disease of the lungs, and that consequently the effect of the inoculation is to produce a sort of pleuro-pneumonia of the skin! Now it is quite true that there is a great resemblance between them—a likeness sufficiently striking to have impressed some very well informed persons—but very little stress ought to be placed on it. All inflammatory exudations, whether specific or not, are very like each other as regards their chemical and anatomical characteristics; so much so that it is not possible to distinguish them from each other excepting by their disease-producing properties. In other words, the only way in which it would be possible to prove that any diseased material derived from the skin of the inoculated animal was pleuro-pneumonic would be by showing experimentally that when introduced into another animal it produced pleuro-pneumonia. If this proof were given we should have a right to conclude from analogy with similar cases, that in all probability immunity would be conferred on the infected animal; but in the absence of such proof, the only way in which the protective power of inoculation can be settled for practical purposes, is by observing whether inoculated animals can get pleuro-pneumonia by exposure.

The experiments which had previously been made for this purpose were unquestionably in favour of the protective power of inoculation. The inquiries of the French Commission,

carried out in 1851, in which fifty-four animals were experimented upon at an expense of £2400, led to the conclusion that "inoculation possess a preservative power conferring on the inoculated animal an immunity which protects it from the contagion of the disease for a time which remained undetermined," inasmuch as the experiments could not be continued for more than six months. This conclusion, founded on experiments which were evidently conducted with the utmost care and impartiality, has been largely confirmed by the trials which have been made of the practice, by owners of stock in this and other countries, and particularly in our Australian colonies. It appears from a recent Government Report, that in the colony of New South Wales the practice of inoculation has been so successful as a preventive that it has become general; so much so, that the chief inspector of the colony was prepared in 1876, to recommend to the colonial government that it should be made compulsory.

But the proof of the protective power of inoculation, even if it were much stronger than it is, would afford an insufficient reason for recommending it as a practice, unless it can be shown that the third question—that which relates to the risk of the operation itself—admits of a satisfactory answer. On the ground of its danger the French Commission, notwithstanding their opinion as to its protective power, declined to recommend it as an economically advantageous practice; for they considered that their own experiments showed "that inoculation causes larger mortality than the disease which it is intended to prevent." No less than 11 per cent. of their animals had died, whereas it was extremely improbable that so large a number would have been sacrificed had they been subjected without inoculation to the ordinary risk of infection. Notwithstanding these facts, the Commission, of which M. Bouley was the secretary, recommended that it ought to be encouraged on the ground that, its protective power having been demonstrated, the dangers above referred to would be diminished by improved methods.

Inoculation is usually performed by inserting the liquid which drains from diseased lungs into the cellular tissue. The situation chosen for the purpose is the end of the tail. The reason why this part is selected is, that if, as often happens, the local inflammation becomes excessive, it may be limited by amputation. But notwithstanding this safeguard, the diseased action is apt to spread to the neighbouring parts, in which case it occasions serious illness and often death.

The position of the question was therefore clear. The protective power of inoculation, though by no means definitively settled, had been rendered sufficiently probable to justify a

more extended trial than it had as yet received. But the effects of the operation as hitherto practised were sometimes so severe that it appeared probable that the risk would more than cover the advantage.

One of the first objects which we had in view in our experiments was to test the possibility of communicating pleuro-pneumonia by mediate contagion. The lungs of animals which had been slaughtered in an advanced state of the disease were placed, in the fresh state, under the noses of ten healthy animals of all ages. As none were infected, it did not seem necessary to repeat the trials in a systematic manner, the more so as the persons who attended on the animals were in the habit of handling the diseased organs which were at that time frequently brought to the Institution for pathological examination.

The experiments on inoculation were commenced in September in 1876. The first practical question which required an answer was whether it was possible by taking extra precautions in the collection of liquid, and particularly by using it only in an absolutely fresh state, to avoid the inflammatory results which have been above described. Five animals were inoculated with perfectly fresh material from a cow-killed the same morning. A few drops of the clear exudation-liquid from the lungs were injected under the skin either of the shoulder or of the side of the neck. For five days the animals remained well; on the sixth day a swelling appeared at the puncture, which gradually increased. In three of the cases it began to subside a week after it had commenced, and eventually disappeared; but in the other two it went on increasing until it had involved the integument of the neck, chest, and belly, at length causing death by general infection, in the one case on the twelfth, in the other on the fifteenth day of the illness. It is to be noticed that the animals exhibited no loss of appetite, nor any other sign of general disturbance, until the third or fourth day after the swelling appeared, nor did the temperature begin to rise in any instance until that time. In the two fatal cases, the highest temperature, four and a half degrees above the natural standard (106·4 Fahr.), was reached three days before death.

The mode of progress of the illness indicated very distinctly that, although we had not communicated pleuro-pneumonia by our inoculations, we had introduced an infection of another kind. If the liquid injected had been a mere irritant it would, if its action had been intense enough, have produced a limited abscess, not a rapidly-spreading and diffuse infiltration. That this was so was confirmed by the appearances observed after

death. The internal organs, and in particular the lungs, were found to be perfectly healthy; but the serous membranes exhibited the appearances ordinarily observed in animals that have died of acute general infection, that is, from what is popularly called blood-poisoning.

In the cases I have related the effects of inoculation were, as has been seen, severe in every instance; for even in the three animals that recovered, the disturbance of health, as indicated by the high temperature and general state of the animal, was considerable. When the tail is selected as the seat of inoculation the case is much more manageable. Here, as before, it is not until the fourth or fifth day that the seat of puncture becomes painful and swollen. The swelling continues for about a week, by which time a slough of dead tissue has usually formed, which eventually separates. About the time that the slough comes away secondary swelling usually begins, and gradually extends to a greater or less distance towards the root of the tail, until, in favorable cases, the neighbouring integument is involved, becoming the seat of diffuse cellular infiltration of the same kind as that which has already been described. In the ordinary case, a common result of tail inoculation is that part of the organ separated by necrosis, an event which is often not attended with any serious disturbance of the animal's health.

There are two reasons why inoculation, as practised in the above instances, is necessarily attended with danger. One of these is that the liquid used, however carefully it is collected, not only contains the virus of pleuro-pneumonia, but possesses morbid properties of another kind, which are due to its being the product of an unhealthy, or, as it is often called, infective inflammation—properties which would have manifested themselves if, instead of the juice of a pleuro-pneumonia lung, we had used any other exudation liquid of a similarly infective character. A second source of danger is, that the living tissue which serves as the channel of introduction is one which we know to be particularly susceptible to infective influences of this kind. By previous experiments, relating to another inquiry, we have found that this second danger could be avoided by infusing the morbid liquid directly into the circulation. We therefore resolved to adopt this plan, feeling sure that, if the pleuro-pneumonic virus possessed any protective power at all, that power would be exercised to the greatest advantage if the liquid were mixed with the circulating blood; for in this way it would necessarily come into contact, not merely with any particular part but with every organ in the body. Another advantage which the

method of infusion into the blood-stream offered was, that from fifty to a hundred times the quantity of liquid could be introduced at once, and thus the chance of infection be vastly increased.

Fourteen animals were thus inoculated. The instrument employed was a syringe, capable of containing two drachms of virus, and furnished with a slender, sharp-pointed steel tube. The point was made to enter the principal vein by which blood returns from the back of the ear, and was usually secured by a ligature. The syringe was then slowly discharged, the greatest care being taken to avoid contact with the cellular tissue. It was often unnecessary to divide the skin. The whole operation was conducted without any appreciable suffering to the animal.

In the first batch of eight animals the operation was, in all but one, performed twice in each case, at an interval of several weeks, with a view to greater certainty of result. With the exception of a small prominence which marked the seat of the inoculation, and subsided in a few days, it was in general followed by no morbid effects, either local or constitutional. In one instance, however, that of an old cow, unfavorable symptoms presented themselves on the sixteenth day after the infusion. On that day the bodily temperature, which at the time had been natural and had until then continued so, rose to $103\cdot2^{\circ}$ Fahr., and on the day following to $105\cdot6^{\circ}$. At this point it remained until the twenty-second day, after which it declined till death, which occurred two days later. The rise of temperature was attended with other signs of fever, and with difficult breathing, which continued to the last. The *post-mortem* examination revealed that the cause of death was an acute double pleurisy; but in addition to this there were appearances which showed that the animal, which was thirteen years old, had suffered from chronic lung disease of very old standing. This, although not the immediate was the predisposing cause of death. The immediate cause was, I have no doubt, the infusion, which, acting on the pre-existing disease, occasioned consequences to which a healthy animal would not have been exposed. It is perhaps desirable to add that the affection of the pleura from which this animal suffered, although properly called a pleurisy, was of an entirely different kind from the pleurisy which forms part of pleuro-pneumonia. The sub-pleural tissue, which in the contagious disease is the principal seat of alteration, was in this animal entirely unaffected: nor were any of those characteristic changes in the lung tissue observed which have been so well-described by Mr. Yeo in this Journal. We are therefore justified in con-

cluding that, whatever may have been its antecedents, it was free from pleuro-pneumonia during the time that it was under observation.

The remaining seven animals were, as has been already reported to the Society, exposed to the infection of pleuro-pneumonia in the most effectual manner that could be devised. They were removed from the Brown Institution, and placed in sheds which were at the time occupied by diseased animals, and in stalls in which such animals had stood. They remained under these conditions for three months, and in some instances for four, after which they were kept under observation for periods which in the majority of the cases extended to six months. None of them showed any signs of infection. In those that were slaughtered the lungs and other internal organs were found to be perfectly healthy.

The other six animals were inoculated early in the present year; but in consequence, first of our being unable to meet with cases of pleuro-pneumonia in situations convenient for our purpose, and subsequently of the obstacles imposed by legislation, all attempts to test the immunity of these animals in an effectual manner proved unavailing; and I found myself obliged to recommend to the Committee that they should be sold.

The results of the experiments have been so far satisfactory that I cannot help regretting that they have been brought to an abrupt termination. The smallness of the number of the animals which we have had the opportunity of experimenting on renders it impossible to regard them as conclusive. The utmost that can be said is that, so far as they have gone, the results are sufficiently favorable to justify us in recommending further trial of the practice of venous infusion to those who are unlucky enough to have their herds invaded by pleuro-pneumonia. As regards the safety of the operation itself, I can speak with confidence. Provided that an operator can be found with sufficient dexterity to perform it, and sufficient conscientiousness to avoid the known sources of danger, the trial can be made without risk. Certainty as to its value can only be attained by the experience of some years.

I cannot conclude this report without pointing out that, in case the value of inoculation should be established, there is no reason why the measures of sanitary police which have been enforced by the Legislature should interfere with its useful employment. It has been distinctly recognised as the basis of this legislation that pleuro-pneumonia is a disease of extremely long incubation—*i.e.* one which may exist and progress in the organism for months without producing obvious

symptoms ; and that it is chiefly communicable by actual cohabitation. The recognition of these two facts has been embodied in the principle of *prolonged segregation of all animals that have been exposed to intercourse with living sources of contagion*. If it is found possible to carry out this principle effectually throughout the United Kingdom, it may be confidently anticipated that the prevalence of pleuro-pneumonia will gradually diminish until, as may be hoped, it may eventually disappear. The realisation of this desirable result would, no doubt, tend to diminish the importance of the question of inoculation. So long, however, as outbreaks of pleuro-pneumonia still exist, the limitation of its areas of prevalence by restrictive regulations would, in my judgment, materially facilitate the application, within the areas so limited, of whatever other means of prevention might be found to be effectual for the diminution of the number of animals attacked.

SHEEP-ROT.

THE *Sanitary Record* of March 21st, 1879, says that a somewhat exaggerated statement has found its way into the papers as to the prevalence of rot in certain recent importations into Liverpool of Irish sheep. For instance, it has been represented that large consignments when landed (we quote from a morning journal) have been found "in the last stage of disease of the liver, and affected with dropsy." It is a pity the public should be alarmed with paragraphs of this description. Still there can be no doubt that rot is at present more than usually rife among sheep received from Ireland. As regards those arriving at Liverpool, we have been at some pains to ascertain the actual facts.

These are as follows:—From 1000 to 1200 Irish sheep are being slaughtered weekly in Liverpool, and very few of them are perfectly sound, the greater portion being more or less affected with rot. But so far are they from being "in the last stage of disease of the liver," that all except a small percentage are passed as wholesome. In the majority of cases only a portion of the liver is affected, and the meat has a healthy look, and "is free from dropsy." The number of animals in which the liver has been found to be much diseased and the carcase œdematous, and which had consequently been condemned and destroyed, during the first eleven weeks of the year, is 325. Out of these 153 have

been seized during the last fortnight. The seizures, from this cause, among sheep arriving from Ireland, have thus, since January 1, only amounted to a little over $2\frac{1}{2}$ per cent., and even during the last fortnight the seizures have not exceeded 7 per cent. The extent and severity of this disease, as regards live stock, is therefore less than it has been represented. We learn, however, that consignments occasionally reach Liverpool of the carcasses of sheep which have died from rot, such carcasses being dressed in the usual way and intended for food. These of course are always seized, and two dealers who have been depositing for the purposes of sale such meat as human food are, we understand, to be brought before the magistrates this week.

The curious parasitic disease known to farmers and dealers as rot, and which in its later stages produces wasting and dropsy, does not at first depreciate the quality of the carcase. Indeed, the presence of a *few* flukes in the liver are supposed to excite its action; and certainly it is believed by all breeders that sheep in the early stage of rot accumulate flesh and fat with exceptional rapidity.

The whole subject is one of considerable interest, and we hope to be able to refer to it at greater length on another occasion.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

MONTHLY Council, Wednesday, April 2nd, 1879. Present, H.R.H. the Prince of Wales, K.G., President, in the chair.

VETERINARY.

The *Hon. W. Egerton*, M.P. (Chairman), reported that the following letter had been received and approved of:—

Royal College of Veterinary Surgeons,
10, Red Lion Square, W.C.; 25th March, 1879.

DEAR SIR,—The Council of the Royal College of Veterinary Surgeons have duly considered your letter relative to the prizes so liberally given by the Royal Agricultural Society for the encouragement of cattle pathology, and also the recommendation of the examiners for those prizes.

The Council acquiesced in the recommendation, and suggests that the competition should be open to all veterinary surgeons who have passed with great credit in cattle pathology (written and practical), although they may not have obtained honours in other subjects.

The Council think that such a scheme would tend to encourage the study of cattle practice among the students. This branch of veterinary science is carried on with difficulty in London, as cattle are rarely, if ever, sent for treatment to the Royal Veterinary College. The Council, however, have been glad to learn that the Royal Veterinary College have lately made arrangements to send a class of students, under a professor, twice or three times a week to the Metropolitan Cattle Market, and also to the foreign market at Deptford.

The Council also think that the extension of time to two years after taking the diploma will act favorably in inducing young veterinary surgeons to study cattle practice after obtaining their diploma.

I am, dear sir, yours faithfully,
(Signed) WM. HY. COATES, Secretary.

H. M. Jenkins, Esq., Secretary,
Royal Agricultural Society.

The committee have to report that the services of an inspector of the Royal Veterinary College have been required in five cases by members of the Society during the past month. The committee have received from the College the following reports on the outbreaks of disease:

March 23rd, 1879.

SIR,—I have to report, for the information of the Veterinary Committee, that during the last three weeks I have made three visits into the country for the purpose of investigating cases of disease affecting either cattle or sheep.

One of these, and the only one now necessary to be published, was on March 8th, when I inspected a flock of sheep belonging to W. C. Morland, Esq., at Lamberhurst Court, Kent, among which several losses had recently occurred. The flock consisted of in-lamb ewes, 170 young ewes, and thirty old ones, which had been kept separate during the winter. At the time of my visit nine of the latter had died, and two of the former; several were ill, and fresh cases kept occurring day by day at shorter or longer periods after giving birth to their lambs. The malady was precisely of the same nature, and had for its origin allied causes to those which were reported on by my colleague (Prof. Axe) to the committee at its last meeting. As in the instances therein named, so in these, medical treatment proved of very little worth when the disease was fully established. It was, therefore, to preventive measures that attention had to be given, and especially to such as would lead to a richer and healthier quality of blood being formed for sustaining the organism under the additional strain made upon it by the act of parturition. For this purpose the innutritious grass, upon which the ewes had been mainly kept during the whole winter, was ordered to be discontinued to as great an extent as possible, and its place supplied by good hay,

chaff, cake, corn, and a moderate quantity of mangel. Salt was also ordered to be given with the manger food, and good protection afforded against inclement weather by placing the ewes at night in a warm lambing yard. These means have proved effective for good, and I have no information of other cases having very recently occurred.

Enclosed with this report I send a communication from Professor Axe, giving particulars of an investigation he has made into an outbreak of splenic apoplexy among animals belonging to Mr. Stratton, at Newport, Monmouthshire.

I am, sir, your obedient servant.

JAMES B. SIMONDS.

H. M. Jenkins, Esq., Secretary,
Royal Agricultural Society.

REPORT OF INVESTIGATION INTO AN OUTBREAK OF SPLENIC APOPLEXY IN A HERD OF BEASTS.

This inquiry was instituted on the 14th of March, in response to a communication received from R. Stratton, Esq., The Duffryn, Newport.

The disease first appeared on the 6th of March, in a two-year-old steer. This animal, together with another, occupied separate compartments in a shed adjoining some yards, in which eighty other beasts of all ages were housed. In the early part of January last the steer in question was brought from a farm several miles distant, and put up to fatten. In consequence of some temporary derangement of his teeth mastication was much interfered with, which caused him to lose condition. An examination of his mouth led to the removal of the defective teeth, after which he rapidly accumulated flesh. To this sudden and extreme change in the condition of this animal I attribute the origin of the disease. After death the carcase was removed to an adjoining barn, and there opened in close proximity to a heap of turnips. In regard to these turnips, inquiry showed that, in the course of the *post-mortem* examination some of them became more or less covered over with the blood of the steer. Of these, some were disposed of; but it is to be feared, from subsequent events, that blood-tainted roots reached the cows in the yard adjoining the barn, as one of them became affected with the disease, and died five or six days afterwards. I had an opportunity of examining the spleen from the last-named animal, and subsequently of making a detailed investigation into the condition of the blood which it afforded. In this anthrax organisms (*Bacillus anthraci*) were found in large numbers, and in the spleen apoplexy, with its attendant disruption of tissue, were strikingly marked. The measures adopted for arresting the progress of the malady had reference to the sanitary condition of the premises, the quantity and nature of the food used, and the general management of the herd.

Two days after my visit I was informed that another cow had

died suddenly, but since that time I have reason to believe that no fresh cases have occurred.

J. WORTLEY AXE,
Professor of Pathology and Morbid Anatomy,
at the Royal Veterinary College.

Mr. Dent wished to call attention to a paragraph in the letter from the Royal College of Veterinary Surgeons, which stated that such a scheme as that recommended by them would tend to encourage the study of cattle practice amongst the students, and that this branch of veterinary science was carried on with difficulty in London, as cattle are rarely, if ever, sent to the Royal Veterinary College for treatment. At the present time agriculturists were very much in the hands of veterinary surgeons with respect to the slaughter of animals for almost every kind of disease, and they were told, officially, that in the education of veterinary surgeons they very rarely had an opportunity of seeing disease in cattle, sheep, and pigs. A wonderful improvement, it was stated, was about to be adopted by sending the students once or twice a week to the Metropolitan Meat Market, and to the Foreign Market at Deptford! It struck him that this arrangement would be on a par with sending medical students to study human diseases by seeing people who attended markets and fairs. He was quite aware that since Colonel Kingscote and other gentlemen had become Governors of the Royal Veterinary College great improvements had taken place, and that efforts were being made to give veterinary students the requisite education; but would it not be possible for these young men to serve an apprenticeship with veterinary surgeons in the country, before going to the Royal Veterinary College? At present agriculturists were so much under the power of the Veterinary Department and of veterinary surgeons, that it was extremely important that the study of veterinary science should be more carefully attended to in the future than it had been in the past. He made these remarks in the hope that the Royal Veterinary College might propound some scheme to give their students further instruction, and he was confident that the Council would be prepared to render all the support they could, both pecuniarily and otherwise.

Colonel Kingscote, C.B., M.P., agreed most thoroughly with every word which had fallen from *Mr. Dent* with respect to the great necessity of veterinary surgeons being competent in their profession, especially as regards cattle, sheep, and pigs. The power now wielded by these gentlemen under the new Contagious Diseases (Animals) Act was very great, and it therefore behoved the Royal Veterinary College to put that education before their students which would fit them to exercise this power with discretion. As long as he had the honour of being a Governor of that College he would do all in his power to provide that the requisite instruction should be given, but it must not be forgotten that there were great difficulties in the way. The Col-

lege now undertook to accept patients gratis, for the purpose of giving students an opportunity of seeing different diseases in various stages, but that offer had been very slightly responded to. He was not at all sure that the scheme of Mr. Dent, as to students being placed with veterinary surgeons in the country, might not be promoted by arrangement between the Royal Veterinary College and the Royal College of Veterinary Surgeons; at all events he would take care that the subject was brought before the Governors of the Royal Veterinary College.

The report was then adopted.

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF COUNCIL, HELD APRIL 10TH, 1879.

Present:—GEN. SIR FREDERICK FITZWYGRAM, Bart. (President), in the Chair.

Messrs. Batt, Blakeway, Collins, Cuthbert, Dray, Fleming, Greaves, Moon, Taylor, G. Williams, and the Secretary.

The *Secretary* read the notice convening the meeting.

The minutes of last meeting were read and confirmed.

Correspondence.

Letters were received from Professor Williams, and Messrs. Withers, Cox, Balls, Morgan and Proctor, regretting of their inability to attend the meeting.

A letter was received from Mr. Menzies returning the petition, as he was sure that the Directors of the Highland and Agricultural Society would object to sign the same in its present form. He also returned the draft diploma, saying, that he did not see anything requiring alteration. The petition was afterwards returned along with the form of diploma which had been approved by the Directors, and the same had been returned to Mr. Loch, signed and sealed both by the Royal College of Veterinary Surgeons, and the Highland and Agricultural Society.

The *President* explained the alteration that had been made in the supplemental charter, which was confined to a portion of the recital.

The Secretary read the following letter from Mr. Rice:

GAYFIELD HOUSE, EDINBURGH;
March 1, 1879.

W. H. Coates, Secretary R.C.V.S.

SIR,—At date 19th ultimo I mailed to you letter, giving date regarding time of my entering the New Veterinary College and the American University from which my M.D. was taken. In letter of ante-date I begged early reply, telling me whether or not the M.D. could be recognised by you. At time of writing I am entirely without other information than that which I then

possessed; am I to be wholly ignored, or will you extend to me the great kindness of information which will enable me to act understandingly?

I am, &c.

F. E. RICE.

The *Secretary* stated that he called at the Royal College of Surgeons, and also at the College of Physicians, and found that they did not recognise "the Vermont Institution."

Mr. Fleming thought that Dr. Rice and the profession would see that the Council had not acted unfairly, but simply on information obtained from two of the most trustworthy and respected bodies in this country.

The *President* pointed out that Bye-law 47 provided only for students holding a diploma of any medical examining body recognised by law. He consulted Mr. Loch on the subject, and he was clearly of opinion that the Council had no power to admit Mr. Rice with any qualification which was not recognised by English law or custom, *i.e.* by the College of Surgeons or the College of Physicians. He was sorry for it, but Mr. Rice could not be admitted under the existing bye-laws.

A letter was read from Mr. Patrick Byrne, of Drogheda, a candidate for the diploma of the Royal College of Veterinary Surgeons, enclosing a certificate from Professor Gamgee, dated 1867, and hoped to be granted the same indulgence that had been given to Mr. Dick's pupils on a former occasion.

The *Secretary* stated that, on referring to the reports of the different examinations, he found that Mr. Patrick Byrne had never put in any appearance at any examination. The question was whether the certificate could be admitted or not.

Mr. Fleming did not think Mr. Byrne was eligible under the original constitution, inasmuch as the body was now differently constituted to what it was at that time. If he was to be examined a meeting would have to be called to pass him specially.

The *Secretary* was instructed to reply to the effect that the applicant was not eligible for final examination.

The *Secretary* read the following letter from Mr. William Dring, of Brixton, relative to his son, who had been rejected three times during his examination, and asked that he might be allowed to present himself for re-examination in July next.

The *President* said he could not be presented for examination again because the bye-law was opposed to it.

Examinations.

At the several meetings of the Court of Examiners, held for the "Pass Examination," on March 31st, 1879, nine students were rejected.

On the 1st April six passed and three were rejected.

On the 2nd April twelve passed, making a total of eighteen passed and twelve rejected.

The *President* explained that the number of rejections was due to the old students coming up under the old system. As

regards the three years' students, the result was very satisfactory indeed.

At a meeting of the Court of Examiners, held on April 3rd, for the "Second Examination," nine passed.

On the 4th of April eight passed and three were rejected.

On the 5th of April nine passed, and on the 7th of April seven passed, making a total of thirty-three passed and one rejected.

At a meeting for the "First Examination," held on the 8th of April, 1879, eight passed and four were rejected.

On the 9th seven passed and three were rejected, making a total of fifteen passed and seven rejected.

The obituary notice was read.

Mr. Fleming proposed the appointment of a small committee to consider a new form of register, the present one being, in his opinion, very defective.

Mr. Collins thought that the same committee which drew out the present register might revise it also.

The *Secretary* said that there would be a new committee appointed for the register in June next, when the committees for the year were appointed.

Mr. Taylor pointed out that in the proposed supplemental Charter it was provided that the votes could be given either personally or by voting papers. He thought it would be a benefit to the College if every one were to vote by a voting paper only, as it would save trouble and turmoil at the annual meeting.

The *President* said it was not too late to make any alteration.

Mr. Taylor said that great inconvenience sometimes occurred when he was appointed scrutineer in consequence of his not being present in the room to vote on certain questions on which he intended specially to vote. He moved—"That at all meetings of the said College all votes that are given for the election of the Council by members of the College must be given by voting papers in the form defined in the bye-laws of the said College, such papers to be transmitted under cover to the secretary of the said College not less than three clear days prior to the day on which the election is to take place."

Mr. Dray seconded the motion, which was carried.

It was arranged that *Mr. Loch* be instructed to insert in place of Clause 3 in the Supplemental Charter one which would carry out the views expressed in the above resolution.

Mr. Fleming presented to the Museum a sample of "Warnecke's Horse Cakes," which was, he said, very valuable as a feeding stuff for horses in the field.

Dr. Voelcker presented a report on "The Adulteration of Food," and Professor Brown, the "Annual Report of the Veterinary Department of the Privy Council Office."

On the motion of *Mr. Dray* a vote of thanks was awarded for the presentations.

The *Secretary* announced that *Mr. Wm. Stanford Harrison*, of Hertford, had forwarded by rail an interesting specimen of a "calf's head."

Mr. Fleming moved a vote of thanks to *Mr. Harrison*, and that application should be made for a history of the case in order that it might be entered in the museum book.

Mr. Dray seconded the motion, which was carried.

A letter was received from *Mr. Jenkins*, secretary of the Royal Agricultural Society, enclosing a printed report on the subject of the letter from the Secretary of the Royal College of Veterinary Surgeons, dated March 25th, in regard to the recommendation of the Examiners of the Royal Agricultural Society's prizes.

The following is a copy of the report :

ROYAL COLLEGE OF VETERINARY SURGEONS,
10, RED LION SQUARE, W.C.; 25th March, 1879.

DEAR SIR,—The Council of the Royal College of Veterinary Surgeons have duly considered your letter relative to the prizes so liberally given by the Royal Agricultural Society for the encouragement of cattle pathology, and also the recommendation of the examiners for those prizes.

The Council acquiesced in the recommendation, and suggests that the competition should be open to all veterinary surgeons who have passed with great credit in cattle pathology (written and practical), although they may not have obtained honours in other subjects.

The Council think that such a scheme would tend to encourage the study of cattle practice among the students. This branch of veterinary science is carried on with difficulty in London, as cattle are rarely, if ever, sent for treatment to the Royal Veterinary College. The Council, however, have been glad to learn that the Royal Veterinary College have lately made arrangements to send a class of students, under a professor, twice or three times a week to the Metropolitan Cattle Market, and also to the foreign market at Deptford.

The Council also think that the extension of time to two years after taking the diploma will act favorably in inducing young veterinary surgeons to study cattle practice after obtaining their diploma.—I am, dear sir, yours very faithfully,

(Signed) WM. HY. COATES, Secretary.

H. M. Jenkins, Esq., Secretary,
Royal Agricultural Society.

The *Secretary* read the following letter from Professor McCall :

VETERINARY COLLEGE, GLASGOW ;
April 8th, 1879.

DEAR SIR,—On the consideration of the President's motion, "That a candidate who fails in the practical examination, either for horses or cattle be not further examined," owing to the near approach of the examination of our students it is impossible for me to be present. I trust that the President's motion may not be carried. I think that the passing or rejection of

students may be safely left in the hands of the Examiners, and as the student has paid a fee to cover the whole of the Examination, both practical and oral, he should be subjected to both tests. If a student is only defective in the practical and fully equipped in the theoretical and scientific, I do not think that such a student ought to be rejected. On the other hand, if the student is defective both in the practical and scientific, no sympathy should be shown, and the full extent of his defects made known to him.

(Signed) JAS. MCCALL.

The *President* said that the motion of which he had given notice was a very small question indeed. The fact was that if a candidate got "Bad" in any subject the Board of Examiners always rejected him however good he might be in others. He might get an "Insufficient," or two "Insufficients," but if he got a "Bad" he was actually rejected. The practical examinations took place in the morning and the result of these was known before the Court of Examiners met, and it was too much to ask them to go on with the examination of a young man whose rejection they knew of beforehand. There might be some advantages to the candidates themselves in going up for further examination; but as it was the invariable rule to reject all candidates who got a "Bad;" and as at 4 or 5 o'clock in the afternoon it was known who had got a "Bad," at the Practical it seemed to him that their going up was a waste of time of the examiners.

In answer to *Mr. Taylor*,

The *President* said that the rule was that any one "Bad" always rejected a student, any mark below the "Minimum" was the same as "Bad."

Mr. Taylor said that students going through the whole examination received a certain amount of education. It was no doubt imprudent for them to come up for examination unless they were thoroughly educated, but if they paid the fee asked it was only justice and equity that they should be allowed to be examined on the whole of the subjects.

Mr. Fleming said he felt the force of *Mr. Taylor's* remarks. In the first place there was a Chairman of the Board of Examiners, and there was also the Board of Examiners who would decide as to the merit of each candidate in the evening, and it was a serious question whether the examiners who examined on the practical subjects in the morning should have the power, without the sanction of other members of the Board, to reject a student. In the second place, the student paid a certain sum to meet the expenses of the whole examination, and to stop the student at a portion of his examination and say that he would not come up for the remainder, raised a rather serious question which ought to be duly considered. He maintained that although a student was bad in his practical examination and the examination afterwards ended in rejection, nevertheless, as *Mr. Taylor* pointed

out, it had a certain amount of educational influence on the student, and did him good. It was a serious question, inasmuch as it would lay on the practical examiner a good deal of onus, which was at present borne by the whole Court of Examiners. He did not think it would be much benefit to the College, but it would save a little by diminishing the number of students who came up for examination in the evening. It was a question, however, whether the students might not claim the right to undergo the whole of the examination, although they knew they would ultimately be rejected. Unless the bye-laws were materially altered, and the students were given to understand that they would have no power to come up for the full examination, he did not think the Council had a right to refuse them such examination.

Mr. Greaves thought he saw the force of the President's argument, that by telling the student when he had failed in his practical examination, he need not go any further, and that even if he was examined by the whole of the examiners the one "Bad" of the practical examination would cause him to be rejected in the end. It would save a good deal of waste of time and waste of money. At the same time he could see the force of *Mr. Fleming's* remarks that it would throw the onus on the practical examiners, an onus which would probably be more than any two or three examiners would like to take upon themselves. He thought it was right that something should be done to impress upon the teachers as well as the students the great importance of the latter obtaining a practical knowledge, without which they would be rejected. If nothing else resulted from the President's motion, it would excite the feeling that it was absolutely necessary that a practical knowledge should be obtained on the part of the student to a greater extent than was the case at the present time. He thought that the President's motion, with some slight alterations, would, if carried, be of very great importance.

The *President* thought that the feeling of the members of Council seemed to be generally against his motion, and he would therefore withdraw it. He had himself no feeling in the matter.

The subject then was allowed to drop.

It was arranged that the candidates for the Fellowship Degree should be examined immediately at the termination of the July examinations.

Members of Council.

The following gentlemen were proposed as Members of Council for the ensuing year :—

The President

proposed *Mr. Dray* and also

Mr. J. Roalfe Cox

Mr. Dray

„ *Prof. Simonds*

Mr. Coates

„ *Mr. Jas. C. Broad*

Mr. Dacre

„ *Mr. Wm. Whittle*

Mr. Geo. Carless

„ *Mr. Henry J. Cartwright*

Mr. Batt

„ *Mr. Jas. Moon*

| | |
|-----------------|-----------------------------|
| Mr. Broughton | proposed Mr. J. W. Anderton |
| Prof. Pritchard | „ Mr. T. W. Gowing |
| Mr. Greaves | „ Mr. A. H. Santy |
| Mr. Gowing | „ Mr. J. M. Axe |
| Mr. M. Clark | „ Mr. G. Balls |
| Mr. Oatway | „ Mr. W. G. Flanagan |
| Mr. Batt | „ Mr. F. W. Wragg |
| Mr. Fleming | „ Mr. A. J. Owles |
| Mr. Morgan | „ Mr. W. Robertson |
| Mr. Moon | „ Mr. Geo. Williams |
| Mr. W. Clark | „ Mr. Thos. Talbott. |

It was agreed to submit the form of advertisement calling the Annual Meeting to Mr. Loch for the purpose of ascertaining his opinion as to whether it was legally drawn up.

The *Secretary* announced that Mr. Gregory had enclosed a cheque on account of the defunct West of England Veterinary Medical Association for the College Fund, and asking a receipt and indemnity from the Council, which was accordingly sent.

Finance Committee.

The report stated that the vouchers and receipts for payments during the preceding quarter had been examined and found correct. The present liabilities amounted to £120 15s. 3d., which the Committee recommended should be discharged. This would leave a balance at the bankers of £330 0s. 5d.

House Committee.

The Committee reported that in accordance with the decision arrived at at the last meeting of the Council, the Secretary reported to the Committee that a trustworthy man and his wife had been selected to take charge of and reside in the College premises, occupying the basement and upper rooms, and that £20 was to be allowed them by the Secretary, a suite of rooms being given up for the enlargement of the Museum. The Committee also recommended that the interior and exterior of the College be cleaned and painted, and that an estimate be submitted to the Committee for the same.

Mr. Fleming pointed out the injury that was being done to the specimens in the Museum from the fungus that was growing on them, owing to the dampness of the rooms in which they were at present located, and proposed that the contents of the present Museum room be removed upstairs, where the rooms were dry and well lighted, and that the arrangement of the specimens be left to the House Committee. He also moved that cases be purchased in which to put the specimens, and that they be such as would be utilised in the new College building.

Mr. Taylor seconded the motion, which was carried.

On the motion of the *President*, seconded by *Mr. Dray*, the Report of the Finance Committee and the Treasurer's statement were received and adopted.

Cheques were ordered to be drawn for the current expenses, and for the postage of voting papers.

Mr. Dray proposed *Mr. Thos. Moore* and *Mr. James Broad, junr.*, as Auditors.

Mr. Taylor proposed *Mr. Woodger, junr.*, if required. Messrs. *Collins*, *Fleming*, and *Dray* were appointed as a Committee to draw up the Annual Report.

Messrs. *Dray*, *Moon*, and *Williams* were appointed the members of the Dinner Committee.

Mr. Collins then detailed the interview he had had with *Mr. Noel* relative to the obtaining the gratuitous use of one of the public buildings for the purposes of the College; but he said he was assured that there were none such available. It only remained to obtain from Government a grant of money, and it would be necessary, for the furthering of this end, that a committee should be appointed to wait on the Duke of Richmond.

After some conversation it was ultimately arranged that a deputation should wait upon his Grace shortly after Easter.

The Council then adjourned.

GLASGOW VETERINARY COLLEGE.

THE winter session at this institution terminated on Wednesday last, and on Thursday, Monday, and Tuesday the oral examinations of the Royal College of Veterinary Surgeons were conducted within the museum of the College. The candidates for diploma were also subjected to a rigid practical examination on horses, cattle, and sheep, selected and brought to the College for that purpose. The board of examiners included the following gentlemen:—*Prof. Turner*, Edinburgh University; *B. Cartledge, Esq.*, F.R.C.V.S., Sheffield; *W. Robertson, Esq.*, F.R.C.V.S., Kelso; *G. Fleming, Esq.*, F.R.C.V.S., London; *Alex. Robinson, Esq.*, F.R.C.V.S., Greenock; *R. L. Hunt, Esq.*, F.R.C.V.S., Birmingham. The following gentlemen were also present as *ex officio* members:—*Principal M'Call*, Veterinary College; *Professors, Knox, Cooke, M'Gill, and Macqueen*, Glasgow Veterinary College. The diploma of the Royal College of Veterinary Surgeons was obtained by the following candidates:—*Mr. John M'Dougall*, Oban; *Mr. Charles Currie*, Brodick, Arran; *Mr. Wm. Miller*, Glenluce, Wigtownshire; *Mr. B. P. Mahony*, Templemore, Tipperary; *Mr. John Hamilton*, Blantyre; *Mr. James Storrar*, Chester; and *Mr. William M'Quiston*, Buchlyvie, Stirling. The following students were also examined for the second professional examination and passed:—*Mr. Harry Mountney Hill*, Somersal, Derbyshire; *Mr. A. Milligan*, Cornwall, Wigtownshire; *A. P. Blue*, Mearns; *W. Stevenson*, Howwood; *A. Cochrane*, Grangemouth; *W. J. G. Johnson*, Belfast; *Richard Hughes*, Llanarmon, Denbighshire; *G. Pollock*, Bridgeton, Glasgow; *R. Stevenson*, Newcastle-under-Lyne; *T. Douglas*, Fenwick, Ayrshire; *E. B.*

M'Lay, Stirling; James Wyper, Glasgow; John Wright, Troon; W. Stewart, Glasgow; Thomas Bowie, Kilbarchan; Mr. Matthew Graham, Glasgow; and Mr. Robert Anderson, Glasgow. Medals granted by the Highland and Agricultural Society of Scotland—Prof. Allen Thomson, London; Prof. Clelland, Glasgow University; and Principal M'Call—and certificates of merit granted by the College were awarded in the different branches of study as follows:—Horse pathology (written examination)—Gold medal (Principal M'Call), Mr. James Storrar; silver medal (H. and A. S. of S.), Mr. John Hamilton; 1st class certificates, Messrs. Mahony and Miller; 2nd class certificates, Mr. Charles Currie. Cattle pathology (written examination)—Gold medal (Principal M'Call), Mr. Storrar; silver medal (H. and A. S. of S.), Mr. Hamilton; 1st class certificates, Messrs. Currie and Mahony; 2nd class certificates, Messrs. Wm. Miller and M'Dougall. Practical examination of horses as to soundness, age, &c.—Gold medal (Principal M'Call), Mr. Wm. Miller. Practical examination of cattle and sheep as to age, operations, &c.—Gold medal (Principal M'Call), Mr. Charles Currie. Junior Division. Horse pathology (written examination)—1st class certificate, Mr. Hughes; 2nd class certificates, Messrs. Wyper, Mountney, Bowie, and Bradley. Cattle pathology (written examination)—1st class certificate, Mr. Wyper; 2nd class certificates, Messrs. Hughes, Blue, Mountney, and Bradley. Anatomy (special and comparative)—Gold medal (Professor Thomson), Mr. Thomas Douglas; silver medal (H. & A. S. of S.), Mr. William Stevenson; 1st class certificates—Messrs. Cochrane, Hughes, Rogers, and Creighton; 2nd class certificates—Messrs. Blue, Mountney, Wyper, Bowie, Freeman, and Gosling. Histology and Physiology—Gold medal (Prof. Clelland), Mr. James Wyper; silver medal (H. & A. S. of S.), Mr. Harry Mountney; 1st class certificates—Messrs. Wm. Stevenson and Thomas Bowie; 2nd class certificates—Messrs M'Lay, Douglas, Blue, Bradley, and Hughes. At the close of the examinations Prof. Turner stated that, in accordance with the resolution of the Council of the Royal College of Veterinary Surgeons, he had the pleasure of intimating that Messrs M'Dougall, Miller, Blue, Mountney, Hughes, and Milligan had passed with "great credit."

NORFOLK AND EASTERN COUNTIES VETERINARY MEDICAL ASSOCIATION.

ON Thursday, the 16th instant, the half-yearly meeting of the above Association was held at the Norfolk Hotel, Norwich, A. H. Santy, Esq., F.R.C.V.S., the president, in the chair. Amongst those who honoured the meeting with their presence were T. W. Crosse, Esq., F.R.C.S., Thos. Greaves, Esq., Ex-president

R.C.V.S., George Fleming, editor of the *Veterinary Journal*, and J. D. Allman, Esq. There were also present Messrs. F. Low, G. G. Whincop, and L. Butters, Norwich; Wm. Shipley, Great Yarmouth; J. D. Overed, Blofield; E. Barker, St. Faith's; W. Ellis, Hempnall; T. E. Augur, Wymondham; F. Case, Swaffham; S. Smith, Lowestoft; D. Rattee, Hapton; H. Buckingham, Harleston; W. J. Bower, East Rudham; and G. C. Hunting, Jun., Halvergate.

Letters regretting their inability to attend were received from Professor Pritchard, Professor Williams, Messrs. Cartwright, Bushman, Hutcheon, Hammond, King, Newson, &c., &c.

The minutes of the last meeting having been read and confirmed, and the Auditors' report received, Geo. Fleming, Esq., was unanimously elected an Hon. Associate, and the following gentlemen, members of the Association:—Messrs. R. Tayler, Colchester; W. J. Bower, Rudham; A. Holl, New Buckenham; S. Barker, Aylsham; H. Buckingham, Harleston; and G. C. Hunting, jun., Harrogate.

The *President* then read a brief inaugural address, in which (amongst others) the following subjects were introduced and discussed: The Contagious Diseases (Cattle) Act, The Supplemental Charter, The Apprenticeship Clause, and the direct representation of the Association in the Council of the Royal College of Veterinary Surgeons.

MR. VICE-PRESIDENTS AND GENTLEMEN,—In opening this the first meeting of my year of office as president of the Norfolk and Eastern Counties Veterinary Medical Association, I am expected to make a few remarks, but shall content myself on this occasion with as few as possible, and those of a brief nature. Most of you are aware that this association was established just ten years since under the presidency of the late W. Smith, Esq., F.R.C.V.S., of this city, and that from various causes it has slept for eight years. My principal object in trying to resuscitate it was to bring members of the profession better to understand each other, and in each other's society on neutral ground to rub off those angles which do occur in professional life, also to enable us to remember that we are still students, and ought to remain such to the end; the ever restless wave of science shows so many varied hues and forms that it is impossible for any to stand and say, I have learned, I know.

I will draw your attention to a few subjects which I think as individuals and as a body require an especial attention.

The Contagious Diseases (Animals) Act.

The New Charter—The Apprenticeship Clause.

Direct Representation of this Society in the Council.

Consultation with non-qualified men.

Professional Etiquette.

Firstly, with regard to the Contagious Diseases (Animals) Act, it must be obvious to the profession and to Government that it was very necessary to include in the Act the disease known as swine plague, it being a most infectious disease, killing vast numbers. Not long since, Mr. Butters had some correspondence with a veterinary surgeon in the North of Scotland, who stated that some pigs bought on Norwich Hill had conveyed the disease to a distillery there, and the consequence was that a hundred of the pigs fell victims. I am of opinion that splenic apoplexy and all anthracoid diseases should be included in the act.

In speaking of the New or Supplemental Charter, it would be well for young members of the profession not to lay aside their books and studies, but diligently to read the former, and by so doing keep up the latter, that they may attain the higher degree after the prescribed time, for if they neglect so to do, they will not in ten years time be eligible to become members of the Council or of the Board of Examiners.

The Apprenticeship Clause.—It is very important that no student should be admitted to the Royal Veterinary College or any of the colleges unless he has been a pupil with some qualified practitioner for two or more years, and prove the same by indentures properly and regularly signed; for no matter how well read, how scientific a man is, or how many degrees he has, if he lacks practice, that is, if he cannot reduce his knowledge to action, and smartly do the numerous operations that are needed in every day routine, he will not shine as a veterinary surgeon. Such proficiency can only be gained by early training, for nothing is likely to cast more discredit on our profession than to see a man perform his duties with a want of knowledge or in a slovenly or bungling manner. If this clause were enacted we might say with "Senex" in the *Veterinary Journal* for December, 1878, that our examiners on the Practical Examining Board would be able to sign the diplomas without fear or trembling, equivocation, or mental reservation of any kind.

Direct representation of this Society in the Council.—Would it not be advisable that we as an association should endeavour to be represented in the Council direct by sending some one we know, and who we could depend upon for supporting our views? I am glad to learn that the Royal College of Veterinary Surgeons and the Highland and Agricultural Society of Scotland have come to an amicable understanding, as I see nothing now to deter us from soon getting the penal clause if we all put our shoulders to the wheel. It is time that the whole profession rose to its own interests as one man, and petitioned Parliament to

recognise its rights; for I deem it a disgrace to this country that young men of education and talent should be deluded into the idea that they are entering an honoured profession, especially now we have an extended curriculum, and at the end of their training, having reached the desired goal, and won the prize, they should find the first time their professional services are required that they are confronted by the horsebreaker or groom vaunting the same distinction as themselves, and discover that the charlatan plumed with their title can boast of the patronage and appointment of the nobles of our land. This cannot exist if you, gentlemen, and such as you, will unitedly claim your rights, and not allow that apathy to remain, which has existed so long amongst us with respect to professional politics. I would petition that every existing practitioner not a member of the college be registered under some name other than that of veterinary surgeon, and that anyone commencing practice under any of the existing names of farrier, cow leech, &c., &c., or title of veterinary surgeon, not holding the diploma of the college, after a given time be summarily proceeded against; then if the public were determined to employ such like they would do so with the knowledge of who and what they were.

Consultation with Non-qualified Men.—Are we as members of a profession to meet non-qualified practitioners in consultations, or is it the opinion of the majority that on no consideration are we to countenance them? It is very difficult to draw the line, as many of our clients make a practice of employing such men for minor operations and trivial cases until something turns up which none expected, and then we are hurriedly called, and in some cases perforce have to consult with the attendant; we cannot refuse when summoned under such circumstances, or if we do, perhaps, it is at great pecuniary loss. I cannot, therefore, see our way out of the difficulty under existing circumstances.

Professional Etiquette.—It is most necessary for the development of our profession that this should be most rigidly observed, for if we act as, and treat each other as gentlemen, so will the public learn to treat us. I think that meetings of this kind are very conducive to this end, and, finally, we may learn to maintain a veterinary surgeon's honour as our own, and be careful not to injure it ourselves, or knowingly suffer it to be done by others if we can prevent it, but boldly repel the slanderer of his good name.

The address elicited the warm approval of those present. The President next introduced the essayist of the evening, Thos. Greaves, Esq., of Manchester, who read a valuable and

able paper on "Germs," their influence in propagating disease, and "Disinfectants," their influence in preventing disease, and in modifying its spread.

PRESIDENT, FELLOWS, AND MEMBERS OF MY PROFESSION.

Gentlemen,—Modern science and research unravel many useful problems, make many additions to the comfort and enjoyment of life, and in the domain of medicine and surgery do much to preserve health, and battle with disease and death; they have thrown much light upon the laws of health, they demonstrate many of those conditions which bring sickness to man and beast, they elucidate the nature of various diseases, and hence secure greater success in their prevention and treatment. The recent study of germs has, especially, cleared up some difficult questions in medicine and surgery, and in surgery particularly have led to great practical results. These active germs dancing in the sunbeam, swallowed by every breath we draw, endowed with wonderful powers of reproduction, the great cause of change or putrefaction in organised bodies is the subject of my address on this occasion.

GERMS, then, may be said to be matter occupying the border land between living and non-living things, it is life in an utterly structureless state, the germinal or life-producing matter afloat in the air, out of which Bacteria spores, and allied low organisms originate. Germs exhibit no characteristic which can be appreciated by the microscope notwithstanding we employ lenses that will make a single hair appear a foot in diameter, and an object an inch long 250 feet in length. By such instruments we are enabled to make visible organised bodies which were before wholly unknown, and convince ourselves of the existence of other bodies not yet traced, the tangible has taken to a large extent the place of the intangible, we have a clearer comprehension of how creation is worked and developed, and it may turn out that the atmosphere is much more pervaded by this class of bodies than we imagine; we are only learning to believe in their abundance, and who knows where our learning will stop, it is apparently true that many of these bodies are of a transparent kind, like a subtle essence, may float in the upper regions, live there permanently, and sometimes come down perpendicularly in air currents whilst they are ready to spring into life. I am deeply impressed with the conviction, that we are but upon the threshold of our acquaintance with these marvellous transformations; it is a new history, a new link in the chain of being; we seem in a certain sense to be living in an invisible world, a short time ago nothing was known of the life-history of these organisms; it seems a distinct landmark to our intellectual advancement; it shows that there is a generation growing which is anxious to explore the mysteries of science, a short time ago nothing was known of the life-history of these mysteries. We find the commonest forms assumed by new born specks of living matter to be

in a measure indestructible, they can live in and resist a higher temperature than would suffice to destroy developed organisms. These germs then may be likened to the acorn which when placed in and surrounded by favorable media ultimately becomes the stately oak. In following out these inquiries we are not pursuing an *ignis fatuus*; there is no delusion, not a shadow of doubt about it. The practical point is this, though air, as air, is pure and innocuous, unfortunately, it ever contains suspended in it organic dust particles and germs which, if brought into contact with an infusion, or moist vegetable or animal matter of suitable temperature, such infusion immediately becomes turbid and swarms with living organisms called Bacteria. It is assumed that 500,000,000 of these organisms exist in a drop of stagnant water. It is proved conclusively that this life-giving principle is altogether distinct from the oxygen or any of the other constituents of the air; it is an essential condition that there must be living germs, or no living organisms can possibly be produced, there is no known atmosphere entirely free; in some localities they abound to a greater degree than in other localities, and whenever they come into contact with dead animal or vegetable matter in a fluid or semifluid form, for which they seem to have a strong affinity, almost instantly it is perceived that low organisms begin to exist.

In order to give a clear light on this subject, it must be borne in mind that atmospheric air consists of oxygen and nitrogen, carbonic acid and aqueous vapour, in definite proportions. The atomic theory shows that these proportions must of necessity be exact or it would cease to be atmospheric air. I am not prepared to say that under no circumstances can it be possible for an excess of some of the constituents to exist; this air presses with a pressure of fifteen pounds upon every square inch of surface. We know it is a mixture, it obeys the law of diffusion of gases, that is, the atoms are mechanically held together and move upon each other with such facility that anything can permeate it, a bird can fly through it, rain can pass through it, mist and fogs can be suspended in it; it would appear that the germs are retained in a state of suspension in the interstices between the atoms of the air, this is proved in a variety of ways. Professor Tyndal has experimented in every possible way for the last two years with nearly ten thousand flasks filled with various infusions, he was determined to recognise nothing that was not tested over and over again with undeviating accuracy; he found when he exposed some of these infusions to the atmospheric air in some localities that the infusions retained their transparency, and not a semblance of life took place in them though they were "exposed" for weeks and months, whereas other flasks of the same infusions were exposed to the atmospheric air in other localities they became turbid, and in two days they were swarming with bacterial life. There was no doubt or uncertainty about these results. The conclusion was absolute and imperative that it was not

atmospheric air but something that existed in the atmospheric air which produced the organisms observed; neither did they exist in the infusion itself from pre-existing germs or pre-existing organisms. Now, these germs may be quite innocent germs; they may exist in countless multitudes where contagious diseases are unknown as well as where they are rife; but if they are received into the system of an individual who is in an unhealthy state, whose secretions simulate the infusions at the time, they are capable of generating fever and inflammation. I beg you to distinctly understand me: these germs cannot produce smallpox, typhus fever, spotted typhus, cattle plague, glanders or farcy, they must not be confounded with the germs of infectious or contagious diseases; these latter germs can only emanate from organisms suffering under these special diseases. These may be transmitted by the breath of an affected person, or by the exhalation from the skin, or by the various excretions. The contagium of some contagious diseases is so subtle that the breath of the diseased organism contains numbers of potent particles of poison, and in this manner the very air of a considerable space, or even district, may become infected with the living diseased germinal matter. This material substance we call germs; they pass from the diseased person to the healthy person's organisms; there they thrive and multiply and produce their kind as all living things do, and that nothing that does not live has ever been proved capable of doing. It is, therefore, living matter. This living poison may be introduced into our bodies by the air we breathe, by the water we drink, or by the pores of the skin. There are material poisons which do not change or increase in their virulence, such as arsenic and the like compounds; but if the 100,000th part of a grain of the living poison is preserved, if even a single seed is allowed to rest undisturbed in some congenial nest, although it may not germinate at once and may lie hid for months or years, yet at the end of that time, when the season or circumstances become favorable to its development, it may suddenly spring into life, begin to grow, and if unchecked, it will rapidly spread abroad and carry destruction and death through entire stables, and even whole districts.

Some authors affirm that whenever material or mineral poisons are taken into the system in excess, viz. to the verge of destroying life, in a constitution of great strength of vitality, its effects upon the system, although not fatal at the time, are such that sooner or later death must result from it; but if the poison be of a vegetable nature, or germs of disease, the dose or doses taken are to the verge of destroying life. If the constitution is strong and can live it out at the time, the constitution will rally and all traces of the poison or effects of the poison will in time entirely disappear; but this is not always the case. As an example, Mr. Henry M. Stanley, the African explorer, is now laid up in Paris suffering from the effects of the attacks of malaria fever caught in the swamps of Africa years ago. He is yet thin and weak, and

recovers so slowly that he is despondent at times of ultimate convalescence.

I have said that infectious diseases can be taken by inhaling the germs floating in the air; nor can this be wondered at if we only contemplate the extremely delicate texture and intricate mechanism of the lungs, when we find that in ordinary breathing about twenty cubic inches, or two thirds of a pint of air enters the lungs of a man at each inspiration, that one or two thousand gallons of air are brought daily into contact with the blood, the whole of the blood in the body is presented to the air in the course of less than a minute of time. About one thousand times a day the air passes over those soft, flexible bags called air-cells, formed of a membrane $\frac{1}{1000}$ th of an inch in thickness, not much thicker than the film of a soap bubble. The lungs of a full-grown person (physiologists inform us) contains 600,000,000 of them. By a process of endosmosis the oxygen (and in all human probability germs also) enter the blood; they are at once embarked in a number of little vessels called red corpuscles $\frac{1}{3000}$ th of an inch in diameter. Physiologists tell us there are three millions of them in a single drop of blood. As to the minuteness of some of the organisms met with, I may mention that the organisms of the pollen of flowers which produce hay fever, are so small that it would require thirty-seven millions to weigh one grain, or six millions of particles of pollen of our English meadow grass. These minute organisms and the white corpuscles of the blood are known to be capable of passing through the walls of the capillaries.

Bacteria are germs that have become organisms, and are of different kinds. Some of them are so minute that they are beyond the reach of all sense, requiring a magnifying power of a thousand diameters. Some of them have motion, some of them have no motion, some of them are oval in form, some rod-shaped, some of exquisitely delicate filamentous fungi, some contain the contagious virus, some do not. Spores are the foliage or bloom of the straight, rod-like bacteria. These cannot be originated by the normal tissues or juices; they must have been derived from the external air; they are found to exist in many parts of the human body, and in animals; never in the blood of healthy persons in life. These germinal matters in the air attach themselves to the particles of dust floating in it; particles scarcely visible in ordinary light appear as motes in the sunbeam or in the beam of an electric lamp. It is by the agency of these particles that they are conveyed from place to place.

The numerous experiments conducted with vast care and exactness by Baron Liebig, Professor Tyndal, Professor Leister, Professor Roscoe, Mr. Pasteur, Dr. Burdon Sanderson, Dr. W. Roberts, of Manchester, and other men. The most advanced thinkers of the present day have proved, as I think most conclusively, that the germ theory is a reality. They show most satisfactorily that if an infusion, or wet dead animal or vegetable matter, at a certain temperature be exposed to ordinary atmo-

sphere for a few hours, it will become peopled with numerous low organisms. These are Bacteria; they are never produced spontaneously, but originate invariably from germs in the surrounding media. They appear in the form of spiral rods, which elongate rapidly; they are then observed to break in segments; each segment becomes a living organism. There are also numerous offshoots, which are called spores; they drop off, and are each of them organisms. They have each the power of propagation, and are endowed with wonderful activity; but if you take the same infusion or wet dead animal or vegetable matter at the same temperature and expose it to air carefully filtered, the aerial dust and germs having been carefully excluded, and the experiment conducted properly, you may allow such air to be in contact with this infusion or other matter for days, weeks, or months, but no such phenomena will take place—not a single living organism will be developed—showing that the germs in the air have been kept back by the filter, and that no other element of the air or principle exists that has the power of producing organisms. This totally disproves the spontaneous generation theory but their experiments prove more than this: they prove most conclusively that no ferment, decomposition, or putrefaction can take place without the presence of these low organisms, yea, these experiments go still further: they show that there exists a strong analogy, if not positive identity, between fermentation and several fevers. It is shown that they both obey the same laws exactly. There are certain stages which each have to pass through, viz. a certain period of incubation, then a period of active fermentation, and then a period of subsidence; nay, further still, it is shown that certain infectious diseases are dependent upon specific organisms, if septic bacteria are the cause of septicæmia, if the spirilli are the cause of relapsing fever, if the *Bacillus anthrax* is the cause of splenic fever, the inference is almost irresistible that other analogous organisms are the cause of other infective inflammations and other specific fevers. It is well known that cattle plague can only be produced by cattle-plague germs; the same holds good of glanders, smallpox, typhus fever, &c. It is known that the essential nature of zymotic diseases is fermentation, and all true fermentation is caused by the development of organisms. Alcoholic fermentation is caused by the yeast plant; this is simply a fungus, or a microscopic organism. It is capable of self-multiplication and endowed with activity, the same as other Bacteria. I may here remark that physiologists have not yet satisfactorily determined whether Bacteria is an animal or a vegetable existence, but whichever kingdom they belong to, they serve to initiate the changes in question are derived from a multitudinous army of omnipresent atmospheric germinal particles, which would seem to be always ready in number and in kind for every emergency. Thus it naturally follows if we can only exclude these special organisms we at once banish all fevers and inflammations which are depen-

dent upon them from our world. It will be perceived that issues of immense importance are involved in this question. Dr. Burdon Sanderson says that in all acute infective inflammation we have microzymes (a species of Bacteria) abounding in the exudation liquids and also in the blood whenever these poisonous germs enter the system, whether by means of respiration, by the food, or by the skin, if they find a suitable media they germinate and at once multiply indefinitely, creating in the system an amount of molecular disturbance, or ferment in exact ratio to the state of predisposition or degree of susceptibility of the animal. If the quantity be small and the constitution strong and healthy, it may prove innocuous; but not so if the vitality of the subject has been reduced to a low point, having been living in impure air and upon unwholesome food, then it will take on a virulent form, and will prove to our cost the danger of defying laws which experience and science has proved necessary to avoid contagious zymotic or preventable diseases. This brings me to the next question.

Contagium.—This is considered not merely an influence, it is something substantial. It resembles solid, round, or ovoidal corpuscles, often quite structureless; it would appear to be something that is alive. The power it acquires in originating a diseased process is one which it acquires by virtue of its having been a constituent of diseased living protoplasm. It may spring from diseased tissue itself, or it may be dependent for existence on the tissue of independent organisms. Dr. W. Roberts gives the name of pathophytes to the organisms supposed to produce the phenomenon of infective diseases, and we know that this contagium can retain its virulent and infectious qualities for long periods of time. It possesses a long enduring dormant vitality; it can get firmly fixed in and accumulate on the walls, timbers, and floors of stables and other places, and whenever favorable conditions supervene its energy is liberated by the proper stimuli. It will then crowd the air and prove itself as intensely venomous as at first. Professor Tyndal informs us that putrefactive organisms fail to produce any deleterious effects upon animal life in its healthy state; that the gases given off during putrefaction are not of themselves infectious.

Professor Tyndal, in "A Battle with an Infective Atmosphere," shows us that the element of contagium is an essential part necessary to produce any contagious disease. Let us for a moment contemplate a case in point. We see a virulent epidemic commence and rage in a certain district. The more intelligent persons of the place at once set about to ascertain the cause of it. In the majority of cases it is soon found out, and measures are immediately taken to remove it. In the meantime numbers of men and women have died, and large numbers of others have imbibed more or less of the poison germs, which have been generated in a given spot—atmospheric action on decomposing matter. Now, does the epidemic cease the moment the original

cause has been removed? No. And why not? It is because germs of the identical species or type are being self-propagated in each individual affected, and thus each individual is a centre of infection and a fresh source of poison germs. It is invariably found that these infected persons give off these poison germs that produce the identical disease, and no other disease, whether it be smallpox, typhus, cholera, cattle plague, glanders, or farcy. We will now glance at the part germs play upon wounds, and the method advised to be adopted.

WOUNDS.—You have no doubt seen wounds in the feet of horses when at grass assume an unhealthy character, and in which you have perceived numerous live animalcules called maggots. These are visible to the naked eye, but if the secretion from the surface of any wound, more especially if that secretion has been allowed to accumulate for a certain time, be placed under a strong microscope, it will be found to contain numbers of minute organisms that the naked eye could not discern, these are called Bacteria. This process is brought about by what in surgical language is called the septic element or, in other words, the germs in the air acting on the decaying animal matter, this matter at times gets absorbed into the system called septicaemia or blood poisoning, this creates fevers and a train of symptoms resembling ferments, its contractive agent is called antiseptics. The manner an antiseptic acts is by depriving the septic germ of its energy, if not also of its life itself; these septic germs are ever present in the atmosphere around us, they are not necessarily contagious germs. Joints and cavities may be opened, and frightful wounds explored with comparative impunity if only the air and the parts and all the surroundings are carefully deprived of these septic germs; no inflammation, no evil result will follow, no tendency to decomposition; the application of the antiseptic must be minute and complete in every detail, the wound, the instruments, sutures, bandages, the surgeon's hands must be entirely and constantly enveloped the whole time in the carbolic vapour or spray. We see that science has discovered agents which can deprive these dust germs and organisms of their energy and action. Amongst these applications is carbolic acid, carbolic acid spray. Thymol one part, in one thousand of water. Mr. W. Thompson read a paper at the last meeting of the Manchester Literary and Philosophical Society on "The Construction of a Room, or a series of Rooms free from Germ Life, proposed for use in the performance of Surgical Operations." He said his object in bringing his paper before the Society was to show what he considered to be a valuable application of a well-known principle, viz. that of filtering from the ordinary air the innumerable spores and germs which are constantly found floating about it, and to arrange a room or a series of rooms in which the air may be rendered optically pure. The practicability of producing and afterwards retaining in a room or rooms of ordinary dimensions of an optically pure atmosphere

was suggested to him by the results of a large number of experiments which he had carried on during the last seven or eight years, but more especially, the results obtained from a series of experiments which he commenced about the beginning of this year on the cultivation of different fungi, the spores of most of which are found in large numbers floating about in our atmosphere. The results of these experiments he thought conclusively showed that ordinary large rooms may be constructed and ventilated with filtered air by means of fans, so that flour paste taken as a test standard, would remain in them free from fungus life; and he believed that such a room, or series of rooms, might be of great advantage in surgery, perhaps as a means of preventing spores and germs from entering wounds of patients and so doing away with or lessening the onus put upon the antiseptic treatment, or of giving a better chance of success in serious surgical operations. The arrangements he suggested on a large scale were a large room or series of rooms in a line, at one end of which should be fitted a fan behind a good filter of cotton wool; a long pipe with a series of Bunsen burners set along it so that when all were lit, a line or sheet of flame would be produced which might be gently passed along and made to play upon every part of the floor, walls, and roof of the room, beginning near the end at which the fan works, and going gradually towards the door, by this means any spores or germs adhering to the walls would be destroyed and no air could pass back to pollute the walls or floor which had been thus purified; a stove might be arranged at the door end of the room by which cotton garments to cover the ordinary clothes of the surgeons and attendants might be heated to a temperature presumably sufficient to destroy or paralyse the vitality of any spores or germs which might have been adhering to them, and where the knives and other appliances used might be previously heated, and where water used in washing the wounds might be previously heated under pressure. With such an arrangement at an hospital it seemed to him that one interesting mode of investigation into some most important subject might be commenced.

DISINFECTANTS are preparations used for the purpose of cleansing or purifying an impure and infected atmosphere, although some veterinary surgeons may hold that it is against principle to adopt measures likely to deprive us of some of our patients, still I hold it to be our bounden duty to prevent, if possible, the recurrence of those diseases that are not amenable to treatment; those diseases which defy treatment, this is, I maintain, the great end and aim of medicine, and I feel proud to see this principle so ably enunciated in the opening address at the Royal Veterinary College last October. Professor Axe said, "If there is one subject in which the wisdom of recent reforms in our educational system stands out more boldly than another, it is in the science of preventative medicine. It is here that laurels are to be won, but only by the patient, energetic, determined

exercise of the highest culture we can command, it is a wide and varied field for the exercise of our powers of thought, and one worthy of all our energies." I speak this to the honour of that gentleman, and to the college in which he labours.

To consider this section of my subject and to grasp its full importance, we must remember we are doing battle with an insidious, inscrutable, and deadly enemy. All the knowledge we have gained by late experience has to be brought to bear upon it. There are two lines of tactics for us to take. The one is to openly attack it and destroy it; the other is to put on an armour, so to speak, and defy it. Let us consider the first proposition. We have ascertained what our enemy is, its nature, from whence it proceeds. We have also ascertained how it is to be met, and how it is to be vanquished.

We have seen how Professor Lister can rid the wounds and also the surroundings of the septic element, and when operations are performed and wounds explored. With the care and precision he describes there is, comparatively speaking, an immunity from danger. If that is true as to wounds, the inference is almost irresistible that the same success may be achieved in the air of the stable and in the hospital. I have a good hope that appropriate antiseptics which kill these germs, and organisms outside the body may also be found to exert a similar destructive power on them when they have gained access inside the body, and by these means may cure or mitigate some of the most serious and most virulent forms of disease that attacks man and animals.

I am told by my friend Mr. Thomas Taylor, V.S., of Manchester, that he has achieved a great advantage, and, as he believes, has freed an infected stable (in which a most malignant form of influenza infection existed) of its infection. He employed chlorine gas, or, more properly speaking, chlorous acid gas. He considers that this gas destroys the contagium or germs, or whatever it may be, in the air in the stable. He says, "I assure you it is a practical fact that in every place where I used it I had the very best success." He further says it is a poisonous gas, and great caution must be exercised. The horses must be removed out of the stable during the fumigation, and not put into it again until all traces of the chlorous acid gas has passed away. The mode he adopts is this: He places a vessel near the ceiling of the stable, into which he pours some hydrochloric acid, then drops into it a few crystals of chlorate of potash or permanganate of potash instead; he then makes the stable as air tight as possible; the gas, being heavy, will roll over the edge of the vessel, descend, and permeate the air throughout the whole building.

In stables infected with glanders and farcy I have found great benefit in the use of coke fires, in moveable grates. I light the fires outside the stable until the smoke and sulphurous fumes have passed off, and when white hot carry them into each stall for half an hour. It not only dries the stall and the air, but it draws into it and consumes all the infected air in the stall; an equally

satisfactory result is obtained from the use of crude carbolic acid fumes. I was very much interested in a lecture I heard lately delivered by an eminent surgeon in the Polytechnic Institution, London. He used carbolic acid vapour, he had a glass retort and spirit lamp, and announced it to be the most powerful and certain destroyer of germs and infectious fevers known. I have used it in several stables with evident advantage. The way I use it is this: I pour about a teaspoonful of the crude acid upon some hot (not red hot) cinders upon a shovel; if the cinders are too hot the acid ignites and a black smoke ascends. This is useless, the acid is burnt; in the other case a dense white fume is emitted. I carry this into each stall two or three times a week. It would seem that this dense white fume shrivels up and destroys the contagious germs, devitalises them. As to the second proposition, my friend Mr. Tedbar Hopkin, the President of the Lancashire Veterinary Medical Association, has been in the habit of giving to all the non-affected horses in a stable in which glanders is known to exist, or is suspected to exist, hyposulphite of soda one or two ounce doses each daily in their water, and in every case, so far as he has tested it, it has proved eminently satisfactory. His idea of it is this, that if you can saturate the system with a medicament that will act as an antidote to the glander poison, then each animal will possess an immunity from it and be protected. I speak it to his honour—he is at this moment instituting experiments with a view to the proving this point. I am sure the best thanks and best wishes of the profession will be accorded to him.

I have now brought my subject to a close, and in conclusion I may say my only motive is to serve my profession. I do not despair, nay I am sanguine, that the time will come when an antidote will be found both for glanders, cattle plague, hydrophobia, smallpox, typhus, cholera, and the like special diseases. It may be found out accidentally, but much more likely by persistent, intelligent study. In urging this I am advocating the cause of humanity. Oh! that I could arouse in you a desire, a love for intellectual research, and that such research could attain this consummation; it would be the brightest and grandest triumph ever achieved by man.

The subject was treated by the essayist in a scientific manner and gave evidence of profound and deep research, in which the opinions of the leading scientists of the day were freely reviewed and criticised. He showed that the theory of germs producing disease had opened up an entirely new field of pathological investigation, which was of the highest possible interest alike to the student of medical and veterinary science; and although he admitted we were at present only on the threshold of inquiry as to the action of germs, yet, nevertheless, he predicted when our knowledge of the subject became more perfect, that most important and valuable results would follow, both as to the treatment

and also (what was scarcely of less importance) the prevention of disease.

A most animated discussion followed, in which Mr. Fleming took part, and contributed much valuable information, both scientific and practical, on this most important and interesting subject; to whom, and to the essayist, a cordial vote of thanks was accorded by the members, who were unanimous in the hope that the visit of those gentlemen would be repeated at no far distant day.

A similar compliment having been paid to the chairman, and other office bearers of the Association, the meeting broke up.

The members and friends afterwards dined together at the Norfolk Hotel, under the presidency of Mr. Santy, and spent a very pleasant evening.

J. D. OVERED, *Hon. Sec.*

LIVERPOOL VETERINARY MEDICAL ASSOCIATION.

THE quarterly meeting of this Association was held at the Medical Institute, Hope Street, February 14th, 1879, Joseph W. Welsby, Esq., President, in the chair.

There were present,—Messrs. Morgan, Reynolds, Elam, Moore, Joseph, William, and Thomas Heather, Lloyd, Simpson, Stevenson, Townson, Cave, Kenny, and Wilson, of Liverpool; Professor Pritchard, Royal Vet. College, London; Messrs. Talbot and Rowe, junr., London; T. Greaves, P. Taylor, T. Taylor, W. A. Taylor, T. Hopkin, S. Locke, E. Faulkner, and M. J. Roberts, of Manchester; W. Whittle, Warsely; W. Woods, Wigan; H. Ferguson, Warrington; W. G. Schofield, Pontefract; D. Somerley and James Freeman, Hull; J. S. Menzies, W. H. Roughsedge and W. Dixon, St. Helen's; P. E. Rothwell, Woolton; James Storrar, Chester; Wm. Dacre, Altrincham; J. S. Carter, Bradford; Darwell, Junr., Northwich; several friends, and the Secretary.

Letters of apology for non-attendance were received from Professor Axe, Messrs. A. B. Proctor, Walter Lewis, A. W. Santy, Niel Barron, John and Alexander Hawson, H. J. Cartwright, H. Barnes, and W. A. Cartwright.

The minutes of the previous meeting were read and confirmed.

The *President* then delivered his inaugural address. He commenced by thanking the members of the Association for the honour that they had conferred upon him in electing him their President for the year, and trusted that no shortcoming of his would mar the usefulness of the Association.

He said there are so many introductory addresses now at our colleges and veterinary societies that if I were inclined to be lengthy in my remarks to you this evening, I should have

some difficulty in finding ground that has not already been fairly trodden, and besides which I feel sure that you will agree with me, considering that we have here our esteemed friend Professor Pritchard, that our time will be occupied with far more pleasure and profit listening to his lecture.

I consider that the two most desirable objects of these Associations are the social elevation of its members, and the advancement of knowledge.

It is daily becoming an acknowledged fact that our profession is of very great public utility and importance, not only because our pleasures often depend upon the maintenance of the health of the horse, but that without him man could not have reached the present state of civilisation, nor have been able to overcome his numerous obstacles to his comfort and happiness. Chiefly, however, it is important because the health and sustenance of ourselves are intimately associated with the prevention among, as well as devising and carrying out hygienic regulations in relation to, the flocks and herds upon which we depend for our daily food.

Many changes have taken place in our profession during the past year; the most important to my mind is the union that, I suppose, is now about concluded between the holders of the Highland Society's certificate and the Royal College of Veterinary Surgeons.

This, I think, will be the means of doing away with feelings on both sides that have been antagonistic to each other for a number of years, and whenever such exists, progress is sure to be impeded.

We shall now be all one with the Royal College of Veterinary Surgeons, which is the only chartered institution in Great Britain and Ireland that has authority to grant diplomas to students attending recognised schools, and which is not strictly an English institute but a national one. Therefore let us hope that, with our united efforts, the science and art of veterinary medicine may advance and flourish, and that we may be able to obtain powers to protect our interests by preventing unqualified persons from assuming the title of veterinary surgeon.

In alluding to the Contagious Diseases (Animals) Act which has just come into operation, I may remark that the veterinary profession has received far greater recognition than in the Act of 1869, and with just claims to it. In the framing of the Act our profession was consulted far more than on the previous occasion, showing clearly that our usefulness is becoming more appreciated. More appointments have been made, but it is much to be regretted that those appointments, under the different local authorities, should not have been distinctly defined by the Act so that gentlemen possessing the diploma of the Royal College of Veterinary Surgeons, or the certificate of the Highland Society, should only have been eligible, whereas, in some instances, unqualified practitioners are appointed.

This being our first meeting of the year, I cannot allow the opportunity to pass without alluding to the deaths that have

occurred during the past year, numbering nearly forty, some of whom were intimately associated with all of us.

It has pleased Him in whose hands are the issues of life and death to remove from amongst us two of our own members, the late Mr. W. Elam and the late Mr. Gilbert Heyes. Let us share the consolation that our departed brethren have been exalted to a higher degree than they could have attained to in this sublunary sphere, and, to quote the words of a certain author, "that, having thrown themselves upon the mercy of their Creator and Judge, in full reliance on His gracious promises, they have been enabled to pass through the Ark of Redemption to the presence of Him who is the Great I am, the Alpha and Omega, the first and the last."

Before sitting down, permit me to say one word. Let us hope that the good work which we have met here for to-night may be continued, and that each meeting may prove more pleasurable and profitable than its predecessor. And I venture a word of entreaty, which is this, that it rests with you to make it so by your regular attendance, and by zealously assisting in advancing its welfare in every way possible, remembering the motto inscribed on the seal of our body corporate "*Vis unita fortior.*"

The *Secretary* read the report of the committee of the Fleming Testimonial Fund. Twenty-six subscriptions had been collected by the committee, amounting to £24 17s. 6d., which had been forwarded to the secretary of the central committee in London, from whom an acknowledgment had been received.

It was unanimously resolved to nominate Mr. William Robertson, F.R.C.V.S., Kelso, as a candidate for a seat at the Council of the R.C.V.S. at the next election.

Professor Pritchard then delivered a lecture on the "Pathology of Curb, its causes and treatment." He apologised to the members for not having written a paper on the subject, the reason being that during the short period that intervened between giving his consent to their President to introduce a subject and the date of their meeting his time has been fully occupied.

In reference to the subject itself he said that they would naturally wonder why he had selected for their consideration such a well-known, every-day disease as curb, one with which they were all so familiar, and upon which nothing very new could be expected even from a Professor.

He, however, expressed a hope that before he had finished his remarks upon the subject, he would be able, in some measure, to justify his selection of such an apparently simple pathological condition as curb was supposed to be.

1st. The position of curb. All know well that it is situated on the postero-inferior part of the hock.

2nd. The pathology of curb. Some structure affected with sprain, the question being, What structure is sprained?

Some say that it is the "calcaneo-cuboid" ligament; others the tendon of the "flexor pedis perforatus;" others the

“annular ligament” at the back of the hock; and others the synovial sheath of the tendons of the “perforans” and “perforatus.” The differences of opinion recorded in early veterinary works, as the structure affected, is just as great as we find expressed in more modern veterinary works upon the subject.

Now I hope to be able, in the first place, to show you that there are no satisfactory reasons for accepting some of these theories, and, in the second place, I will endeavour to point out the true site of the disease.

But in order to render my description as clear as possible, I will briefly describe the structures situated at the postero-inferior part of the hock.

There are the tendons of the “perforans” and “perforatus,” which at this point pass down in close proximity to each other; there is the strong fibrous ligament at the posterior part of these structures, the so-called “annular ligament,” and the strong band of ligament extending from the apex of the os calcis to the cuboid and external metatarsal bones—“calcaneo-cuboid” ligament.

Is curb sprain of the calcaneo-cuboid ligament? I answer no. This is one of the strongest ligaments of the body, its function being to assist in holding the calcis in its proper relative position to the other bones of the hock, and to deal with the strain put upon the calcis, which is considerable at times, on account of that bone affording a point of leverage.

Had this important structure become sprained—partially lacerated—recovery would seldom or ever take place. But in addition to the calcaneo-cuboid, we find strong interosseous ligaments which assist in retaining the os calcis in its position, and I opine that any force which would bring to bear such a strain upon this part to lacerate the calcaneo-cuboid ligament, would also so sprain the interosseous ligaments as to set up an amount of inflammatory action that would give rise to articular disease, and that would tend to make almost every case an incurable one.

Then there is the position of the enlargement exactly opposite the lower extremity of the calcaneo-cuboid ligament. Now, why should it always occur here if it is the ligament that is affected? The ligament is as strong here as at another part, and the strain upon it is no greater.

Then, again, if this ligament be the site of the disease the enlargement would always be nearer the outer side of the hock than the inner, and my experience is that the enlargement, if anything, favours the inner side.

But why should this ligament be supposed to be the site of the disease at all? for in no *post-mortem* examination of curb that I have made have I ever found it in the slightest degree involved in the disease, which certainly would not be the case if diseased action had ever taken place in it, for in sprain of similar structures, such as the superior sesamoideal ligament, we find an infiltration of lymph into its structure, with considerable external

deposit, which never entirely disappears. Why should not the same result follow sprain of the "calcaneo-cuboid" ligament if it is really the structure affected in curb?

Professor Pritchard here showed the members several freshly prepared specimens of curb, which, while pointing out the site of the disease, clearly proved that the calcaneo-cuboid ligament was in no degree involved in the diseased action.

As to the theory that the annular ligament is the site of the disease, annular ligaments seldom suffer from inflammation, unless caused by external injury, as in the knee-or fetlock-joint, or from an extension of the diseased action set up in the other structures of the joint, very rarely from absolute sprain; then why should it occur in the hock joint?

"There is plenty of room for the tendons to work, and it must be borne in mind that, besides these tendons passing down in company with them, there are the nerves going to the lower portion of the leg. If the annular ligament was liable to partial laceration from pressure put upon it by these tendons, what would become of such important structures as these? But, as in the case of the calcaneo-cuboid ligament, there is no evidence *post-mortem* that diseased action has ever existed in the annular ligament in cases of simple curb.

"Then as to the theory that curb is sprain of the tendon of the "flexor pedis perforatus," I may content myself with simply stating that, like the two theories above noticed, there is no evidence whatever on examination *post-mortem* that this tendon is involved in the diseased action. We may have sprain of this tendon, and also the tendon of the perforans where the tendo-subtarsal ligament joins it, but in no case of simple curb have I ever seen the tendon diseased."

The Professor then referred to Percivall's theory of curb, and also to that propounded by one of the old writers on veterinary art, which he said came the nearest to his own, viz. a sprained and inflamed condition of the synovial sheath placed between the perforatus tendon and the posterior annular ligament of the hock.

The Professor said, if we examine these synovial sheaths carefully we find one between the perforatus and perforans tendons, one anterior to the perforans tendon, and one between the annular ligament and the posterior surface of the perforatus tendon.

"My own opinion," said Professor Pritchard, "is that curb is sprain of that synovial membrane situated between the annular ligament and the perforatus tendon. The inflammation and deposition may extend to the sheath between the two tendons, but the deposition first takes place in the former position. I have examined curbs twenty-four hours after their formation, and have found the deposition in that particular position. But you may ask,—How does the synovial membrane become sprained? The tendons have free movement, and even when the limb is flexed.

with the greatest rapidity and to the utmost extent, both tendons work together, yet it must be put upon the stretch somehow before it can be torn. The explanation is this:—The synovial membrane is attached to the white fibrous tissue at the posterior part of the hock, and consequently allows of a certain amount of movement only, and when that is exceeded sprain to a greater or less extent must occur.”

The Professor then briefly enumerated the causes of curb, the principal and immediate cause being extraordinary flexion of the hock, young animals being most liable to it.

The conformations of hock most disposed to curb were those with a very short and straight os calcis, and the reverse.

Curby Hocks.—He said this shape of hock was due to an unusual development of the head of the outer small metatarsal bone, sometimes mistaken for curb, but easily distinguished from it by passing the finger down the centre of the back of the hock to the inner side of the calcaneo-cuboid ligament, when no elevation will be felt, and the enlargement in such hocks does not appear when the hock is viewed from the inner side.

Treatment.—Reduce the inflammatory action by rest and the application of tepid water intermittently, so as to allow of evaporation. This he preferred to the constant application of either hot water or bandages to the part. The after-treatment to consist of blistering or firing, or both.

Mr. Reynolds said that their thanks were due to Professor Pritchard for his very clear and, to his mind, very satisfactory exposition of the pathology of curb. He considered that it was very much wanted.

In reference to treatment, the course recommended by Professor Pritchard was perhaps the most scientific, but it was often found impossible to carry it out in ordinary practice. For instance, he remembered a case which occurred to himself soon after he left college. A country parson rode into their infirmary yard from the hunting field one day in November and asked him to examine and prescribe for his mare, which had sprained her hock. I recommended antiphlogistic remedies as a preparation for other treatment to follow, when I was immediately met with the rejoinder, “Young man, you know nothing at all about your business. I want my mare to hunt next week.” I never forgot that, said Mr. Reynolds, and as a matter of practical experience I have found that the application of a severe blister at once, continuing the animal at work, answers very well in the treatment of curb. He preferred the biniodide of mercury ointment as a blister, and in reply to a question, said that he would continue to work the animal even if he was lame.

Mr. Peter Taylor expressed his warmest thanks to Professor Pritchard for his very valuable contribution towards the solution of the true pathology of curb, but, nevertheless, he was inclined to differ from the professor’s view that it was the synovial sheaths that were affected in this disease, for, he said, in inflamma-

tion of joints and all synovial structures we find a greater degree of lameness than we ordinarily find associated with curb. And, on the other hand, the lameness in curb does not correspond to the size of the swelling, which led him to believe, notwithstanding Professor Pritchard's very logical reasoning, that the synovial sheaths of the tendons were not the site of the disease, but that it was the calcaneo-cuboid ligament that was affected.

In reference to treatment, Mr. Taylor said that veterinary surgeons were asked by their clients to cure their horses, and quick, and the veterinary surgeon who could the most readily comply with that request was the one who would be the most highly appreciated. As to the formation of hock most disposed to curb, he, Mr. Taylor, differed from Professor Pritchard in his experience: a short os calcis rarely became affected with curb; and even sickle-shaped hocks were often found to stand severe work very well if carefully seasoned.

As to whether a horse having a curb was sound or unsound, he considered that if the inflammatory action had subsided and the horse was going sound he was practically a sound horse. He said he had a client who at one time bought all the suitable horses which he could find with curbs. This gentleman's treatment was a strong application of ammonia and constant work.

Mr. Storrar said that he had a four-year-old colt at one time, which sprung a curb while his son was riding him. This case somewhat confirms Professor Pritchard's view of the pathology of this disease, for there was a bursal enlargement on each side of the tendon of the perforatus. By rest it passed away in a few days, but returned on his being rode again. He was then put to harness, and did not go lame afterwards. He was of opinion, however, that in those cases of curb where the form of the hock was altered the calcaneo-cuboid ligament was affected, and a great many of such cases showed sprain as well.

Mr. Dacre said he had listened with very great pleasure to Professor Pritchard's lecture; it bore upon itself the stamp of original research. He, however, could not understand how synovial membranes could become sprained at all. They were loose, not attached at both extremities like a ligament, and he could not understand how an enlargement should be left when such a structure as a synovial membrane only was inflamed. Again, curb has shown itself immediately after the animal has been pulled up. He was, therefore, still inclined to put the question, What is the true site of curb? As to the question of soundness, he would consider the animal sound if he was going sound.

Mr. Greaves said that he had listened with very great pleasure to Professor Pritchard's lecture, but he would have been even more gratified had the professor been able to tell them how it could be effectually cured. The most useful knowledge to them was how to reduce the swelling.

Mr. Greaves then referred to the various modes of treatment,—

antiphlogistic, active blistering in the early stages, and firing, but he said neither of these methods were completely successful in effecting the removal of the swelling. The best application for that purpose which he had tried was a solution of the oxy-muriate of mercury in spirit of wine.

He was of opinion that curb was hereditary, and could be formed without any injury at all, as he had seen them on animals which had not been out of the stable for some time prior to their formation. The prevention of curb! He said he had a client at one time who would not hunt a horse unless his hocks were fired. Did Professor Pritchard think that firing strengthened a healthy hock in that respect? Also would he favour them with his opinion as to the action of iodine in enlargements of this character?

Mr. Freeman said that it could not be the tendon nor the calcaneo-cuboid ligament that was sprained in curb, for if either was injured, the animal could not go to work again in a day or two. Referring to the opinion expressed by Mr. Greaves that curb was hereditary, and could become developed while the animal was standing in the stable without any previous injury, he, Mr. Freeman, was of opinion that curbs produced under such circumstances were caused by the animal slipping when getting up, &c. As to any gentleman who would refuse to hunt a horse unless he was fired on the hocks, he would ask such a gentleman, Did he consider himself wiser than his MAKER?

Mr. Hopkin, like the other speakers, expressed the pleasure with which he had listened to Professor Pritchard's lecture. He said it indicated independent thought and original investigation, and after describing the various characters and appearances of curb, such as the large diffused swelling, and the well-defined small firm band, he said, "Have we two kinds of curb, and is it the annular ligament that is affected in some cases?"

Mr. Carter said he agreed with Professor Pritchard as to the pathology of curb. In treatment he did not find that firing reduced the swelling. His practice was to blister and keep at work.

Mr. Wilson said his mode of treatment was to put on a high-heeled shoe and rest until the lameness ceased, then apply a solution of the bichloride of mercury in spirit of wine—strength Hydrarg. Bichlor. ʒj; Spt. Vini ʒiv. One dressing produced a very thick scurf.

Mr. T. Simpson said he agreed with Professor Pritchard that it was the synovial membrane which must be affected in curb; it could not be a weight-supporting structure that was injured, as the animal could not then resume work so soon after.

Mr. W. A. Taylor said he agreed with Professor Pritchard that it could not be the calcaneo-cuboid ligament that was injured in curb from its very attachments. At college, he said, we were taught that it was a sprain of the annular ligament. I think we are not far off the true site of the disease now. As

to the subject of soundness, he said you may have a recurrence of lameness from the same curb.

Professor Pritchard, in reply, said in reference to the theory that the calcaneo-cuboid ligament was the site of the disease, in his opinion, if there was one theory less likely than another to be the true one, it was this—if it really was the structure sprained in curb, he was of opinion that the patient would run a poor chance of recovering.

In reference to Mr. Dacre's difficulty in understanding how an enlargement should be left where such a structure as a synovial membrane *alone* was sprained, Professor Pritchard said that when a synovial membrane is placed in the position of a sheath for a tendon or between a tendon and a ligament, it will allow of a certain amount of movement and no more; if this be exceeded laceration takes place, inflammation follows, and a quantity of lymph is thrown out, which subsequently becomes organised; he very much doubted whether many of the cases of so-called sprains of the hock, tendons of the fore and hind legs, are anything more than laceration of the synovial sheaths in connection with the tendons.

In regard to the reduction of the swelling by remedial measures, the Professor said there was a quantity of serum and fibrin effused in curb, and he was of opinion that it was seldom completely absorbed; but he considered the application of the biniodide of mercury ointment preferable to cantharides for this purpose, because when not too strong, you can continue its application for five or six days in succession without any risk of subsequent blemish. It causes the formation of a very thick scurf, which remains on a long time and exerts a pressure which has a very beneficial effect.

He did not believe that curb was hereditary, but always resulted from an injury; nor did he consider that there were two kinds of curb, but only different degrees, depending upon the extent of the injury originally inflicted.

In regard to the idea that firing was beneficial as a preventive against curb, he did not believe that firing strengthened a healthy hock at all, and it was an act of cruelty to practise it for that purpose.

The *President* then proposed that a letter of condolence be sent from the Association to Mrs. Hayes, expressing the sympathy which the members feel for her in the sad bereavement which she has sustained in the death of her husband.

This was seconded by the *Secretary*, and carried unanimously.

The *President* then proposed a vote of thanks to Professor Pritchard for his kindness in coming down among them, especially on such short notice as he was able to give him on the present occasion, and treating them to such an interesting and instructive lecture as they had just listened to.

This was seconded by *Mr. Greaves*, and carried by acclamation.

Professor Pritchard, in reply, said, that he was very much gratified by the reception which they had given him. He was aware that there had existed among the northern brethren a sort of reproachful feeling towards the Professors of the London College because they had not come more frequently among them ; but he begged to assure them that their absence was not due to will, but to lack of opportunity. As an instance he might tell them that he had to travel 140 miles by rail yesterday ; “to-day,” he added, “I have come here and must return to-night, as I have to start from London to Ipswich to-morrow morning at 5 o’clock.” He thanked them for the kind appreciation which they had evinced in the subject which he had introduced for their consideration, and he could assure them that it was an ample reward for any little inconvenience which he might have experienced to be able to contribute something suggestive of thought to an Association like this, and to be privileged to meet with its members.

A vote of thanks to the President terminated a very instructive and harmonious meeting.

D. HUTCHEON, *Hon. Sec.*

NEW MEMBERS OF THE PROFESSION.

ROYAL COLLEGE OF VETERINARY SURGEONS.

At the several meetings of the Court of Examiners of the Royal College of Veterinary Surgeons, held during the week commencing March 31st, the following students from the Royal Veterinary College received their diplomas, and were admitted members of the profession :

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| Mr. Thomas Pritchard . . . | Hereford. |
| — Henry Theakston . . . | Burnley Hayton, Yorkshire. |
| — George Sydney James . . | Frome, Somersetshire. |
| — William Timothy Carmody | Brompton Road, South Ken- sington. |
| — Alfred Charles Turner . . | Croydon, Surrey. |
| — James Mills | Hitchin, Herts. |
| — Edward Simpson Shave . . | Stamford Hill, Middlesex. |
| — John Davies Thomas . . . | Ffoshilyg Llandyeril, Cardigan- shire. |
| — Joseph Bainbridge | Brough, Westmoreland. |
| — William Frank Smith . . . | Downham Market, Norfolk. |
| — James Blakeway | Stourbridge, Worcestershire. |
| — Titus Littler | Long Clawson Melton Mowbray. |
| — Henry Shaw | Hackney. |
| — William Henry McCaldon . . | Oxford Street, Manchester. |
| — William Robert Emery . . . | Totteridge, Whetstone, London. |
| — William Alston Edgar . . . | Dartford, Kent. |

Mr. Arthur Cox . . . Nottingham.
 — Chas. Hedworth Golledge Whaddon, Trowbridge, Wilts.

Messrs. Alfred Charles Turner, James Mills, John Davies Thomas, William Frank Smith, James Blakeway, Titus Littler, William Henry McCaldon, and William Alston Edgar passed with *great credit*.

The following students of the Royal Veterinary College passed their second examination at the meetings of the Court of Examiners, held April 3rd, 4th, 5th, and 7th :

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|-------------------------------|----------------------------|
| Mr. Edward Harvey Kelly. | Mr. Donald Gregory. |
| *— John Trevor Jones. | *— Thomas Jarvis Rippon. |
| — John James Crowhurst. | — George Henry West. |
| *— Alfred John Hickman. | — Thomas Skilton. |
| *— Edward George Johnson. | *— Arthur Samuel Auger. |
| *— Walter William Gulleford. | — Ernest Robert Harding. |
| *— George Gartside Mayor. | *— Wm. Frederick Garside. |
| *— Charles St. Lo. Wilkinson. | †— Henry Thomas William |
| *— Walter Jas. Paige Palmer. | Salmon Mann. |
| *— Edward Slipper. | *— George Deveson. |
| — Harry Chrichley Talbott. | *— Theodore Charles Toop. |
| — Stephen Marsh Smith. | *— Sidney Villar. |
| *— Thomas William Cave. | — Fredk. Francis Woolcott. |
| *— Frederick Leeds Gooch. | *— Alfred Harris. |
| *— Arthur William Briggs. | — Charles Taylor. |
| *— William Caudwell. | *— Thomas William Lepper. |
| — George Richard Griffith. | *— Herbert Alfred Towlson. |

The following students passed their first examination on April 8th and 9th :

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| Mr. James Hall Brown. | *Mr. Robert Samuel Barcham. |
| — Thomas Bower Cockshoot. | *— John Varney. |
| *— Robert James Smith. | *— Edward Henry Scott. |
| *— George Edmundson. | — Harry Redford. |
| *— William James Williams. | — Sydney Bright Price. |
| — William Louden. | — Charles James Vyner. |
| *— Arthur Broad. | — Thomas Arthur Huband. |

Mr. John William Barford.

At the several meetings of the Scottish section of the Court of Examiners of the Royal College of Veterinary Surgeons, held in Edinburgh and Glasgow on April 16th and 17th, the following students passed their final Examination and received the diploma of the Royal College of Veterinary Surgeons :

EDINBURGH VETERINARY COLLEGE.

Mr. William Henry Hill . . . Sunderland.
 — Geo. Marshall Mitchell . . . Garvald Grange, Prestonkirk.
 — Charles Rutherford . . . Edinburgh.

Mr. Charles Rutherford passed with very great credit.

* Thus marked passed with great credit.

† „ „ „ „ „ very great credit.

EDINBURGH NEW VETERINARY COLLEGE.

| | |
|------------------------------|------------------------------|
| Mr. Joseph Semple . . . | Aberdare, S. Wales. |
| — Henry Vaughan Lloyd . . | Denbigh, N. Wales. |
| — Alexander McKenzie . . . | Woodside, Keith, Banffshire. |
| — Freperick Bridge . . . | Birkdale, Southport. |
| — John Henry Wilson . . . | Edinburgh. |
| — Edward Hugh Leach . . . | Wigan, Lancashire. |
| — Andrew Hume . . . | Womerlau, Berwickshire. |
| — Frederick Garside . . . | Newton Heath, Manchester. |
| — Philias Martial . . . | Port Louis, Mauritius. |
| — Edmund Woods Goldsmith . | Shipham, Norfolk. |
| — Thomas Herbert Lewis . . | Crewe, Cheshire. |
| — Thos. Barritt Storre . . . | Swinton, Manchester. |
| — John Carr . . . | Paston, Northumberland. |
| — Alfred Jas. Jones . . . | Eccles, Manchester. |
| — John Legge . . . | Island of Islay.. |

Messrs. Edward Hugh Leach, Andrew Hume, Frederick Garside, Edmund Woods Goldsmith, Thomas Herbert Lewis, and John Legge, passed with great credit.

GLASGOW VETERINARY COLLEGE.

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| Mr. John Baillie Hamilton . . . | Blantyre, Lanarkshire. |
| — Miller . . . | Glenluce, Wigtonshire. |
| — Bernard Patrick Josh. Mahony | Templemore, Co. Tipperary. |
| — James Storrar . . . | Chester. |
| — John McDougall . . . | Oban, Argyleshire. |
| — C. Douglas Hamilton Currie . | Brodict, Buteshire. |
| — William McQuiston . . . | Buchlyvie, Stirlingshire. |

Messrs. Miller and John McDougall passed with great credit.

The following Students passed their Second Examination :

EDINBURGH VETERINARY COLLEGE.

| | |
|---------------------------|------------------------|
| Mr. William Calvert. | Mr. Christopher Black. |
| — Alex. Henderson Gentle. | — William Hill, |
| — William Ryan. | — Alexander Grey. |

EDINBURGH NEW VETERINARY COLLEGE.

| | |
|--------------------------|----------------------------|
| Mr. Harry Josiah Hunt. | Mr. Wharton Wm. Foster. |
| — James Walsh Canty. | — James Chalmers. |
| — Thomas Caldicott. | — Frederick Jas. Richmond. |
| — George Sandemann. | — Archibald Munro. |
| — James Wood Ingram. | — George Whitehead. |
| — George Edward Nash. | — John Richd. Simpson. |
| — William Swithinbank. | — Wm. Owen Williams. |
| — Wm. E. Smith Richmond. | — Alfred Mority Michaelis. |
| — Arthur Joseph Dobbryn. | — E. J. A. Currie Yorston. |

Mr. Jas. Johnstone Fraser.

GLASGOW VETERINARY COLLEGE.

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| Mr. John Knight. | Mr. Thomas Bowie. |
| — William Stewart. | — Alexander Milligan. |
| — James Wyper. | — Allan Pollock Blue. |

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| Mr. William Stevenson. | Mr. Richard Hughes. |
| — Alexander Cochrane. | — George H. Pollock. |
| — Harry Mountray. | — Robert Stevenson. |
| — William J. G. Johnson. | — Thomas A. Douglas. |
| Mr. Ebenezer B. McLay. | |

The following Students passed their First Examination :

EDINBURGH VETERINARY COLLEGE.

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|---------------------------------|-----------------------|
| Mr. Louis William Delacheroris. | Mr. Geo. Marks Davey. |
| — Lionel L. Leach. | — Thos. James Grum. |
| — Clement Burston. | — John Rogerson. |
| Mr. David Jones. | |

EDINBURGH NEW VETERINARY COLLEGE.

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| Mr. Wm. Irwin Roberts. | Mr. Wm. Foster Greenhalgh. |
| — W. G. Burnet Dickinson. | — Frederick Whittaker. |
| — John S. Fredk. Cottam. | — Harry Scowcroft. |
| — Arthur Fredk. Appleton. | — Arthur Plant. |
| — Thos. Archibald Mitchell. | — F. Huntington Osgood. |

GLASGOW VETERINARY COLLEGE.

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| Mr. Matthew Graham. | Mr. Robert Anderson. |
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PARLIAMENTARY INTELLIGENCE.

IMPORTATION OF AMERICAN CATTLE.

HOUSE OF COMMONS, *April 7th.*

In reply to *Mr. Giles*,

Lord G. Hamilton said: It is quite true that a transshipment of cattle has in certain instances been allowed from the Victoria Docks to Deptford, but there is no similarity between the circumstances under which this leave was temporarily given and those existing at Southampton, for which my hon. friend also claims the privilege of transshipping American cattle to Deptford. Previous to the recent Order in Council a number of American cattle were landed in very large trans-Atlantic steamers on the north side of the Thames; subsequent to the order it became necessary for these ships to land their cargoes at the Foreign Animals' Market at Deptford. The size and draught of these vessels rendered this very difficult, and it being not considered expedient to establish a foreign animals' market north of the Thames, leave was given for the shipment of cattle under certain precautions, and the supervision of the Customs officers across the Thames. Southampton has no foreign cattle market, and cattle would be shipped, not from one to another part of the same port, but from one port to another port, viz. from Southampton to London.

The other business was disposed of, and the House adjourned at 10 minutes past 1 o'clock until Thursday, the 17th inst.

COMPLIMENTARY DINNER AT CANTON, CARDIFF, TO MR. G. BODINGTON, M.R.C.V.S.

ON Tuesday evening, April 8th, a complimentary dinner was given to Mr. Bodington, at the Market Hotel, Canton, he having recently retired from the representation of the Canton Ward, in the Cardiff Town Council, owing to an intended removal to Blackwater. About sixty gentlemen dined together. Mr. Councillor Yorath occupied the chair, and Mr. Councillor G. A. Stone the vice-chair. There were among those present, Councillors W. E. Vaughan, Sanders, Newbery, Lougher, Treseder, and J. Evans (South Ward). After the usual loyal and patriotic toasts had been duly honoured, the toast of the evening—"Health and prosperity to Mr. George Bodington in his new career"—was proposed by the Chairman, who said that Mr. Bodington, being a man of sterling qualities, was worthy of success. He had been, as far as his means permitted him, a friend to all those who knew him or needed him. In parting with Mr. Bodington, the Chairman said he should lose one of his oldest and best friends. He had been associated with Mr. Bodington in public affairs for over twenty years, and in all the ups and downs of Canton—and it had seen a good many ups and downs within the last few years—they had stuck together. He hoped that, in leaving, Mr. Bodington would better himself; and he wished Mr. and Mrs. Bodington every success. Mr. Bodington had always done the best he could for his constituents, whom he had faithfully represented. (Loud cheers.)

The *Chairman* read a telegram from Alderman Jones, dated London, in which the Mayor, the Deputy Mayor, Alderman Bowen, the Town Clerk, and the Surveyor, expressed their hearty sympathy with the proceedings of the evening. (Cheers.)

Mr. Bodington, in reply, remarked that he felt great pleasure in thus meeting his friends—men of varied religious and political opinions—gathered round a social board. Whatever he had done in the public interest, as well as in his own private interest, he had done with a clean heart and a pure spirit, and he believed in a gentlemanly manner. The pleasure he felt in meeting his friends was greatly enhanced by the receipt of the telegram just read, and the fact that the Deputy Mayor had assured him he would be a missed man.

Other toasts followed.

The following address, largely signed, was presented to Mr. Bodington:—"We, the undersigned, inhabitants of Canton and neighbourhood, desire to express our regret at your removal from amongst us. Looking back over the long period of your residence here (more than twenty years), and recalling the active and useful part you have taken in connection with so many public movements, your past membership of the Canton Local Board, and, later, of the Cardiff Town Council, we are conscious of the honorable manner in which your duties have been discharged,

whilst at the same time we are keenly alive to the generous and sympathetic help which you have always been ready to extend to any charitable project. Our best wishes go with you to your new home, and our hope is that the future of your life may be in every way happy and successful."

OBITUARY.

DEATH OF THE *late* PROFESSOR VARNELL.

It is with very deep regret that we have to record the death of Mr. G. W. Varnell, who for some years held office as one of the Professors in the Royal Veterinary College. The event was not altogether unexpected, as for many months he had suffered from paralysis, and during the last few weeks serious complications affecting the digestive organs had manifested themselves. Mr. Varnell, who was the son of a Norfolk yeoman, showed, even in his boyhood, a great liking for veterinary science, but as time passed on, circumstances arose which prevented his entering the Royal Veterinary College as a student. He consequently betook himself to America, and settled ultimately in New York as a veterinary surgeon not holding a diploma. His success was great, and after a few years he returned to England and became a student at the College.

In April, 1846, he passed his examination, and obtained his long-wished-for degree. Within a few months of this time the office of Demonstrator of Anatomy in the College became vacant, and Mr. Varnell was unanimously elected by the Governors to fill the vacancy. In his new position he acquitted himself with great credit, and was highly esteemed by his colleagues and the students. He rose step by step, and ultimately became Professor of Anatomy, also Assistant Clinical Instructor, in which capacity he had confided to his care a large proportion of the Infirmary practice.

In 1869, after holding office for twenty-one years, he retired to his native county, and engaged in agricultural pursuits. His death took place on Friday, April 25th, at his farm at Belton, near Yarmouth, to the deep grief of his many surviving friends and neighbours.

The following deaths have been reported to the Secretary of the Royal College of Veterinary Surgeons:

Mr. John James Lang, M.R.C.V.S., Royal Artillery. His diploma bears date April 28th, 1859.

Mr. William Wallace, M.R.C.V.S., Wolverhampton. His diploma bears date February 21st, 1828.

Mr. Griffith Thomas, M.R.C.V.S., Aberayron. His diploma bears date April 29th, 1868.

Mr. John Harding Hughes, M.R.C.V.S., Swansea, Glamorgan-shire. His diploma bears date April 25th, 1866.

Mr. George Kirkby, M.R.C.V.S., Holbeach. His diploma bears date April 15th, 1869.

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Communications and Cases.

FACTS IN FILARIASIS.

By J. L. PATERSON, M.D., Bahia. Communicated to
Professor COBBOLD.

THE observations, detailed below, were undertaken by Dr. Hall and myself for the purpose of ascertaining, with some approach to accuracy, in what proportion the general population of this place are infested with the *Filaria sanguinis hominis*, and whether the existence of that parasite in the blood be associated, either as cause or effect, with any particular class or classes of diseases.

On the first point our observations, as will appear in the sequel, throw considerable light; the second remains, and will probably for long remain, as dark as ever, and the wisest course, perhaps, in the meantime, is to collect and authenticate facts, as they arise, leaving their co-ordination and fusion into a coherent system to a wider and more accurate knowledge than we as yet possess. This is what we have attempted to do.

During the two months, from the 23rd September to the 22nd November inclusive, we examined microscopically the blood of 309 individuals, taken at random, and without reference to the diseases they suffered, or might be supposed to suffer from. They were, in fact, the first five or six individuals, not already examined, who happened to present themselves, day after day, at the consultorio.

Of these 309 individuals, taken thus promiscuously, twenty-six were found infested with the *Filaria sanguinis hominis*, that is, one in every twelve, and this proportion was uniform throughout the entire series, for in each of the 300 we found eight, the other two being in the remaining nine.

As, however, for want of time, we very rarely in this preliminary examination took more than a single lamina from each individual, it is probable that with more time at our disposal, and with more lamiads from each, we should have found the proportion somewhat higher, say one in ten; for if from a person known to have the filaria in his blood, six lamiads be taken, the parasite will rarely be found in all, seldom, indeed, in more than four; nor is the first lamina always one of the fertile four. Moreover, with our necessarily rather hurried examination, a filaria, even if present, may have escaped detection.

Of the 309 individuals 16 were males, and 140 females. In the former were found 15, or 1 in $11\frac{1}{4}$ with filarids; in the latter 11, or 1 in 13.

Seventy-nine were whites, 168 blacks, and 62 of mixed race.

Of the 79 whites 3, or 1 in 26, had filarids.

Of the 168 blacks 16, or 1 in $10\frac{1}{2}$, had filarids.

Of the 62 of mixed race 7, or 1 in 9, had filarids.

The whites, should this observation be confirmed by others, enjoying a very marked immunity, as compared with the other two races.

In the table below, ranged in decennial periods, is given a list of the ages of the persons examined, and the number of filarids found in each; premising, that of the 15, many of the ages stated are simply approximative guesses.

| | | | | | | |
|------|-----------|-----|----------|-------|---------------|--------------------------|
| From | 1 to 10, | 14 | examined | and 1 | filarid found | = 1 in 14. |
| „ | 11 to 20, | 34 | „ | 3 | „ | = 1 in 11. |
| „ | 21 to 30, | 106 | „ | 10 | „ | = 1 in $10\frac{1}{2}$. |
| „ | 31 to 40, | 80 | „ | 6 | „ | = 1 in 13. |
| „ | 41 to 50, | 45 | „ | 5 | „ | = 1 in 9. |
| „ | 51 to 60, | 25 | „ | 1 | „ | = 1 in 25. |
| „ | 61 to 70, | 4 | „ | none. | | |
| „ | 71 to 80, | 1 | „ | none. | | |

The youngest age at which we found filarids was 10, the oldest 54.

The 3 whites were all males. The first, an Italian, æt. 48, long resident in Brazil, suffered from commencing lymph scrotum. In the second visit he paid us we took six lamiads from the blood of the scrotum, and six from the finger. In

2 of the former we found one filarid, and none in the other 4, nor in any of the six from the finger. Let it be remarked in passing that the filarids of which we speak we found alive in every case.

The second white, æt. 28, suffered from hæmaturia of two months' duration. The filarids were found in the blood deposited from the urine, and were alive in it even at the end of thirty hours. None were found in six lamiads taken from the finger. The hæmaturia in this patient was refractory to all treatment for two months, at the end of which time he went for a few days to the Feira de Santa Anna, and during his stay there the urine became quite clear. The blood reappeared, however, on his return to Bahia. He then left for the island of Madre de Deos, and, the day after, his urine became quite clear, and has remained so. We have not again had an opportunity of examining his blood.

The third white, æt. 23, had been suffering for some months back from albuminuria, and had the filaria in great abundance. While under observation he had an intercurrent attack of jaundice, and when this new disease became fully developed the albumen for a time disappeared from the urine, returning as the jaundice passed off. The filarids were in no way affected by the change.

The first 2 at least of these whites, it will be observed, suffered from diseases that have generally been considered as associated in some way, not explained, with filarids.

The other 23 are given simply in the order in which they presented themselves, with the diseases either diagnosed or complained of.

1. A black woman, æt. 46, complained of intestinal irritation.

2. A coloured boy, æt. 10, simple intermittent fever.

3. A coloured man, æt. 24, with giddiness and nervous derangement and depression in apparent health.

4. A black man, æt. 40, fissures in soles of feet.

5. A black woman, æt. 30, rheumatalgia, with œdema of the legs.

6. A black man, æt. 22, lymph scrotum, with frequently recurring attacks of erysipelas in scrotum, arms, and legs.

7. A black woman, æt. 48, embarraco gastrico.

8. A black man, æt. 38, embarraco gastrico, with great increase of white corpuscles.

9. A coloured woman, æt. 50, sacculated aneurism of the innominata, as well as of the left carotid at its bifurcation. We counted fourteen filarids in one lamina.

10. A black woman, æt. 40, emphysema of lungs of fifteen years duration. Epigastric uneasiness.

11. A coloured girl, æt. 15, fibroid tumour over the parotid gland.

12. A black woman, æt. 34, syphilitic ulcer on ala nasi.

13. A black woman, æt. 22, breathlessness, dizziness, fugacious swellings, coming and going all over the body, one of these above the ankle had suppurated before being seen by us.

14. A black man, æt. 30, anæmia, dizziness, fugacious swellings in hands, arms, legs, &c., coming and going periodically.

15. A black man, æt. 24, syphilitic bubo and rheumatism.

16. A black woman, æt. 40, stricture of rectum.

17. A black woman, æt. 54, large ovarian tumours.

18. A coloured woman, æt. 28, retroversio uteri.

19. A black man, æt. 26, pain in chest from a blow three months ago, formerly but not during last year suffered from intermittent fever.

20. A black man, æt. 38, for the last four days pain on right side of thorax running down corresponding arm with a feeling of numbness and weakness, otherwise now and always quite healthy.

21. A coloured boy, æt. 14, pain in right side of thorax, with weak respiratory murmur on that side, puerile on left. Enlarged bronchial glands compressing root of right lung.

22. A black man, æt. 44, hydrocele.

23. A coloured boy, æt. 12, small cheloid tumour following a cut.

In one very well-marked case of elephancia or Elephantiasis Arabum occurring in one leg of a white woman, aged thirty-three, we found no filaria, though carefully looked for in many lamiads both of the lymph from the leg and the blood. We found the number of filarids varied much in different individuals. We have already mentioned one lamina in which were found fourteen, and the last case on our list, the boy with the small cheloid tumour, had still more. In the Italian, on the contrary, with inefficient lymph scrotum out of six lamiads from the scrotum one filarid only was found in two, none in the other four and none in six lamiads of blood from the finger. In the case of hæmaturia we found the filarids only in the blood deposited from the urine, and none in six lamiads from the blood of the finger.

Filarids, even in the same lamina, live for very varying

periods ; we have frequently seen them alive at the end of thirty hours.

We found that the best lens to look for them was one magnifying 100 diameters.

One word in regard to the so-called involucrum. We have never in any quite recent lamina seen a filaria with anything resembling an involucrum, nor in any lamina so long as the blood retained its perfect fluidity. On the other hand, we have invariably seen an involucrum developed by the wriggling of the filaria, whensoever (the serum and blood globules being squeezed out) it had to plough its way through plastic fibrine. We have over and over again, both with low and high powers, watched the filaria while swimming free and naked in serum, thrust its head into a surrounding film of viscid fibrine, and with some effort drew it out again, trailing behind it a broad product which it gradually in the more liquid serum whisked off as it kept twisting and untwisting itself, and this process we have seen repeated half a dozen times in as many minutes. The same thing we saw happen over and over again with the tail or any other part of the body, and still oftener, of course, with the whole body, before the fibrine, gradually hardening and contracting, squeezed the life out of it. A similar adventitious involucrum we can easily believe, though we have not observed it, might be formed round the filaria from a very fine film of serum as this went on to *set*. A drop of water allowed to pass under the covering glass freed the filaria at once from its involucrum were it never so dense, never so extensive. We are, therefore, we believe, in a position to affirm that the so-called involucrum is no integral part of the filaria, but simply an adventitious film of fibrine.

Like other observers we were struck with the fact that the filaria was often exceedingly active for hours in its movements. These consisted almost entirely in twisting and untwisting itself and not in progressing from one part of the slide to another, so much so that, as a general rule, it would for hours remain in the field of a high-power lens. Does not this depend simply on the fact that, by the fall of the covering glass, the filaria has been driven in into a hollow between this and the slides, out of which it finds no egress? The few exceptions would seem rather to confirm the truth of this hypothesis, showing that the filaria can progress where there is room for it to do so.

The space is necessarily always very shallow, and we constantly saw filarids getting caught between the two glasses either by the head or tail or any other part of the body,

and disengaging themselves only after great effort or not at all.

In one black man, aged forty, suffering from intermittent fever we found no filarids, but a great number of minute bacteroids having not a wriggling but a darting motion. We had but a single lamina, and the patient was gone before we made the discovery and never returned.

A number of interesting questions may be suggested as awaiting further investigation before a complete answer can be given to them. For example, how long is this abnormal state of the blood capable of lasting in any one individual? Again, what is the life-duration in the blood of any one filaria? By what organs, and how are these entozoa eliminated? Are they so eliminated alive or dead? And if sometimes, at least the latter, are they so entire or after disintegration? Where do they reside? Within the blood-vessels? And there only or also in the lymphatics or even in the intervascular spaces? Above all whence come they? Many zealous investigators, both here and elsewhere, are already in the field, and we may confidently hope for some more definite reply than has yet been furnished to these and other questions.

To Dr. Hall occurred the idea of extending his researches to the dead body, and finding a living filaria in blood from a vein at the upper part of the arm, he made a very careful search of the heart, thoracic duct, &c., but found no parent filaria nor any other fact tending to the solution of the above problems.

SYNOPSIS OF CONTINENTAL VETERINARY JOURNALS.

By JOHN HENRY STEEL, Demonstrator of Anatomy at the Royal Veterinary College.

(Continued from p. 334.)

Summary.—From the *Recueil de Médecine Vétérinaire*, 15th April, 1879:—*MM. Bouley, Hervieux, and Pasteur*, "On Puerperal Fever, as related to Bacteria." *M. Zundel*, "On the Position of Private Practitioners in Germany," *Bulletin de la Société Centrale de Médecine Vétérinaire*. *M. P. Cagny*, "On Bacteria Infection, especially of the Intestines in Hernia," *Revue Vétérinaire de Toulouse*, April, 1879. *M. Mauri*, "On Trichinosis in Spain."

M. Bouley's chronique of the 15th April, 1879, deals extensively with the subject of puerperal fever in its relations to parasitic organisms. His remarks are based upon a communication made by a M. Hervieux to the Academy of Medicine, on the 11th March of the present year. Treating of septicæmia puerperalis, this gentleman concluded "that the lowest known organisms, vibrios, bacteria, rods, moving-bodies, are powerless to explain the disease." He hesitates to accept the interpretation of a large number of pathological phenomena by the intervention of atmospheric germs, because it fails to accord with clinical observations. Thus, if the accidents of childbirth are absolutely dependent upon the action of external germs everywhere diffused through the atmosphere, why do they not affect all subjects alike? Why do these germs appear especially active in lying-in hospitals, where puerperal fever rages with intensity, whilst, at the same time, in spite often of miserable surrounding conditions in the same town, others, at childbirth, escape their effects? If the vibrios threaten all existence, and, consequently, that of lying-in women, at all times and in all places, why do they succeed in affecting such only at certain times and in particular places? Because (says M. Hervieux) it may well be that Bacteria have nothing to do with the production of puerperal septicæmia, and the part assigned to them is really performed by that unknown agent which we term "miasma," and whose physical characteristics have hitherto baffled the investigations of the most learned savants. How, by means of the germ theory, can we explain that the patients resist puerperal septicæmia, whilst thousands of vibrios abound in their *lochia*, which are foetid in excess, whilst others, with the lochial discharge suppressed or scanty, succumb rapidly from septicæmia? Also, how can we reconcile with this doctrine the fact that in lying-in hospitals puerperal epidemics seem to rage with a lamentable preference among the youngest, most robust, beautiful, and healthy? Also, during an epidemic, not only *accoucheuses* become affected, but also pregnant women, or those who have recently given birth, nurses, and midwives, superintendents, and even doctors may contract it. By what entry, according to the theory, in this last case could the vibrios essential to the production of the disease gain entry into the system? Puerperal miasma capable of penetrating epithelial surfaces can explain these facts, which would remain incomprehensible, on the theory of atmospheric germs such as could obtain entry into the system only by disorganisation of tissue. Such was M. Hervieux's argument, before answering, whilst

it was necessary to determine whether a microbic organism is essentially characteristic of this disease.

M. Pasteur, in reply to *M. Hervieux*, showed that the disease termed *pebrine*, which occurs epizootically among silk-worms, used to be attributed to a miasma, but experimentation has demonstrated that it is due to living beings. Cholera of fowls was similarly attributed to miasma, but *M. Toussaint* has shown that it is caused by a specific vibrio which can be cultivated, and which produces constant effects when introduced by inoculation into organisms which form media favourable for its development. With regard to this question of media, *M. Pasteur* thus drew attention to two important facts which are destined to throw some light on the still very obscure pathology of contagious diseases. "I am going to draw attention to some facts which are remarkable and very obscure if we know nothing of the etiology of disease, but which become evident and naturally result from the light which the germ theory throws upon the subject. Inoculate fowls with the cultivated vibrio in a pure state, all, or at least the greater number, die in from twelve to forty-eight hours afterwards. Inoculate a number of guinea-pigs and many will not succumb, but all will have abscesses at the seat of inoculation. Remove a small portion of pus from an abscess of one of those inclined to recover, and you will find the pus capable of fresh development in favorable media, of producing death of fowls inoculated with it. What can be more complex than this if you fail to view it in the light thrown on it by the germ theory? In the guinea-pig the microbic finds a medium less favorable to its development than in the fowl, hence its resulting lesions are localised, so to speak; but it is, nevertheless, in the abscess produced, ready under suitable circumstances to resume its original virulence. Also another remarkable fact is, that the organism is capable of culture in different infusions, but all culture fails in infusion of yeast, which, however, proves the very best medium for the *Bacillus anthracis*, for example. This fact leads to some confusion when applied in pathology." If the miasmata of *pebrine* and of fowl cholera have now vanished, or rather, like the demon of *Lesage's* romance, have been "placed in a bottle," always ready to act, and constant in their effects as soon as they are restored to the medium where they are capable of manifesting their activity, why can we not seize this unknown miasma of puerperal fever which *M. Hervieux* has brought forward? Very possibly it may soon assume the form of a vibrio. Already *M. Pasteur* has given an idea of what it may be by drawing

from induction a figure of a small organism composed of chaplets of spherical grains, a variety of which causes fermentation of the mulberry leaves in the intestinal canals of silk-worms, such as occurs in the disease termed *flacherie*. Another variety he in 1862 announced as the cause of ammoniacal fermentation of urine. German authors have determined its presence in a number of pathological cases, especially diphtheria and puerperal fever. M. Pasteur has found it in the horse and in man in the pus of closed abscesses, especially in the case of a young woman who presented multiple abscesses in the thighs and arms. On examining her blood, *post-mortem*, he found the organism present, and was hence led to surmise that it is the cause of puerperal fever. M. Pasteur hastened to verify this before the time of the next meeting. He obtained blood from a patient suffering from puerperal fever, and could only doubtfully note the presence of the organism in question; but he placed it in cultivating solution and obtained the same organism without intermingling of other forms, as grains arranged in pairs or in chaplets. During life, and seven, and thirty-two hours after death, fresh cultivations were made, and in each case with the same results. The last were made with a small drop of blood from the foot and with blood from the femoral vein. The result was uniformly the development of the same organism. After death, the uterine pus and lymphatics, &c., showed this organism associated with others under the form of very fine points, and of rods very small and frequently mobile. By cultivating pus from the peritoneal cavity in another case, a mixture of the "chaplet" form with an organism previously recognised as an active generator of pus was obtained. "I cannot too much insist here on the circumstances that the two organisms of which I have just spoken are very common, are found everywhere, and may be obtained from common water. I will, later on, explain the strangeness of this statement when joined to the affirmation that the etiology of puerperal fever should be especially sought in relation to microscopic organisms as found in pus. Pure pus is comparatively harmless when injected into the blood vessels, giving rise only to local abscesses of a metastatic character; but often pus contains microscopic organisms which find in the blood or in some other fluid of the body a medium adapted to their development. Serious results ensue, according to the nature of the microbe present. Nothing, for example, is more different than the affections produced in the body by the chaplet grains, from that resulting from the little organisms such as we have just noticed, as readily pro-

ducing pus, &c., and from others such as we also find in common water. And these differences are still more marked, if we think of the nature of infective organisms, such as the bacterium of charbon, the septic vibrio, and the microbic organism of the poultry yard. The terms purulent infection, septicæmia, bacteræmia, are *generic*, the *specific* conditions are very numerous, according to the nature of the *contagium vivum* on which they depend."

In Germany the position of private practitioners is no better than in France. The law guarantees the title of veterinary surgeon to those who have passed fixed examinations after a certain period of study at one or other of the six veterinary schools (Berlin, Hanover, Dresden, Giessen, Stuttgart, and Munich), but, at the same time, it allows professional liberty and authorises empirics to practise treatment of our domestic animals. For Germany, as for France, we may say with M. Sanson that the practice of the veterinary profession is entirely free as is that of shoemaking or hair-cutting. Whoever believes himself sufficiently in the confidence of the public to enable him to gain by it his daily bread can freely practise in all security, and without fearing the opposition of any one. The diploma of the veterinarian guarantees only the title which it confers, and by no means the exclusive right to practice operations such as the title suggests. Nevertheless, it is this diploma which imposes on the practitioner a sense of the seriousness of his task, and of the importance of the duties which are connected with it; it gives him a responsibility to his conscience and to society to be always ready, by day or night, to brave the fatigues and even dangers of practice. It leads him not only to protect the capital which is represented in the sick animal, but also but also to succour as rapidly as possible the poor animal which is the humble servant of man, to prevent the sufferings of those who are our humble brothers, as the excellent Michelet said. The veterinary profession in general is far from being in all countries what it should be. I have already noted a curious thing some time ago in a *chronique* of the *Clinique Vétérinaire*. We find, in general, under a somewhat absolute governmental system, as notably in large states, the number of veterinarians being insufficient, empirics have full scope; in small states, on the contrary, in free countries duly qualified veterinarians abound, so to speak, and then there are no empirics.

In France, Prussia, Austria, &c., the schools scarcely produce the number of veterinarians necessary to replace those who, by death and other causes, are removed from their

practices ; in small states—Belgium, Switzerland, and in South Germany—on the contrary, there are enough or too many practitioners. In these small states now more advanced scientific knowledge might advantageously be required from veterinarians in the future. This influence of large and small states upon the position and number of these veterinarians has been remarkably illustrated in the formation of the German Empire ; various states, such as Baden, Hesse, and Saxony, where empiricism was not tolerated, and where there were no longer empirics, again became overrun by them when the Prussian law regulating industries (*Gewerbeordnung*) became applied to the whole empire ; Saxony, especially, which enjoyed an admirable organisation, due especially to the influence of M. Haubner, has suffered much from this law, supposed to be liberal, but which is not so, for it fails to take into consideration the time spent by veterinarians over useful and severe studies, and the great value of the services they can render. With a little protection of the veterinary profession surely there would be attracted to it a number of young men who now hamper other professions. In large states it is scarcely possible to supply veterinarians enough for educational, government, municipal, and military purposes. This scanty supply necessitates the use of empirics, who are too often tolerated simply for want of duly-qualified professional men. The influence of large and small states on the number of veterinarians is proved by illustrations from the following table, where we have, on the one hand, the number of large animals which statistics allot to each veterinarian, and, also, the surface of ground which the same calculation gives as his range :

| Country. | Number. | | Of Kilomètres Worked by each Veterinarian. |
|-----------------------|------------------------------|---------------------------------------|--|
| | Of Private Practitioners. | Of Large Animals per Veterinarian. | |
| Wurtemberg | 292 . . . | 3,714 . . . | 64 |
| Switzerland | 304 . . . | 3,815 . . . | 136 |
| Saxony. | 227 . . . | 3,903 . . . | 69 |
| Belgium | 368 . . . | 5,519 . . . | 79 |
| Hesse | 62 . . . | 5,950 . . . | 125 |
| Baden | 114 . . . | 7,446 . . . | 133 |
| Prussia | 1,296 . . . | 8,062 . . . | 267 |
| German Empire . . . | 2,864 . . . | 9,035 . . . | 213 |
| Bavaria. | 369 . . . | 9,237 . . . | 182 |
| France | 2,516 . . . | 9,430 . . . | 135 |
| Alsace-Lorraine . . . | 62 . . . | 9,827 . . . | 229 |
| Austria-Hungary . . . | 1,269(?) . . . | 17,200 . . . | 495 |

N.B.—A “large animal” commonly is estimated as follows : 1 large animal = 1 ox = $\frac{2}{3}$ horse = $1\frac{1}{3}$ mule or ass = 10 calves or sheep = 4 pigs = 12 goats. A. Zundel, *Recueil de Médecine Vétérinaire*, 15th April, 1879.

Bulletin de la Société Centrale de Médecine Vétérinaire.—
M. P. Cagny communicated a paper on bacteria infection. He says that from the researches of MM. Pasteur and Toussaint he has been able to explain facts which had hitherto seemed inexplicable. "Thus, in a *commune* where charbon is almost unknown, after the introduction of a new herd of working beasts in a few days charbon appeared. All the herd was handed over to the butcher, and, in spite of professional advice, the owner did not disinfect his stalls. At the end of two months he bought some more animals, which, after a short period of life in these stalls, became affected with charbon. They were sold and the stables disinfected, and since then the disease has disappeared from the farm. Another fact tends to the same conclusion: on a farm where no death had ever occurred from splenic apoplexy six foals remained for a whole year in an inclosure without injury. Some years after, in 1870, the proprietor brought thither cattle affected with splenic apoplexy from a farm where the disease was prevalent; some cows died and were buried there. In 1872 four foals were placed there in November, but in the following May three of these were attacked, the fourth was saved by removal. In 1875 some Dutch cattle were placed there, of which one died of splenic apoplexy. All these animals had up to that time never left a healthy farm, and their fellows who were not taken into the dangerous inclosure remained free from the disease. Also *M. Signol's* work should be placed in relation with that of MM. Pasteur and Toussaint; *M. Bouley* gave a *résumé* of that gentleman's experience on the 'Virulent condition of the blood of healthy horses, killed by poleaxe or by asphyxia' in the *Reçueil* for 1876, p. 16. It proves that blood obtained from the vena cava or vena portæ acquires, under certain conditions, properties which render it fatal to sheep and goats inoculated with it. 'Has it become septic under the influence of the agents which the mesenteric veins have acquired in the intestine and brought into the vena portæ?' suggests *M. Bouley*. Now, with regard to the septic vibrios these too *M. Pasteur* has studied, and he considers that septicæmia is always the consequence of the introduction into the organism of germs obtained from without. But this is not allowed by all surgeons, and a short time ago at the Academy of Medicine *M. Maurice Perrin*, while accepting the conclusions of *M. Pasteur* as far as they bear on wounds always more or less exposed to the air, hesitated to accept them as bearing on septicæmia when proved in connection with certain abscesses deeply seated,

for instance, near the liver, consequently close to the alimentary canal. If I have well interpreted the symptoms and the lesions which I have proved in certain cases of colic in the horse, I can say that the septic vibrio also is ingested with alimentary matters. When a horse is affected with an unrelieved strangulated hernia the primary symptoms are violent, then some ease ensues. No signs of general fever are present; death occurs after about forty-eight hours of suffering, and if the autopsy is made promptly and favourably only a localised gangrene of the herniated portion is found. In a case of volvulus of the small intestine, a disease which is accompanied by considerable intestinal congestion, death occurs sooner—in about thirty-six hours. The symptoms are those of strangulated intestine; there is no general fever, and the gangrenous lesions are not more extensive. If, however, the blood-extravasation occur in a part of the intestine filled with alimentary matters, which is especially in the case of strangulation of the large colon at its diaphragmatic flexure, the phenomena are markedly different. Shortly after the commencement of the colic pains symptoms of putrid infection may be noted, as muscular twitchings, special conditions of the heart's beat and the pulse, general sweats, dilated nostrils, also the agitation which is generally noteable in cases of colic, is scarcely perceptible; also the general febrile state is very pronounced. Examination per anum shows the large intestine in a hard mass, which at each effort is driven against the pelvis; puncture of the right flank by giving exit to foetid gas *with the odour of gangrene* produces only temporary alleviation. It may be performed many times with uniform effects. Puncture of the large intestine per vaginam was tried in a mare. On withdrawal of the trochar it was found covered with a bloody black layer with a gangrenous odour; from a therapeutic point of view these punctures prove useless, though from some attempts, I believe, they prolong existence, but they are important for diagnosis. Finally we note a highly important difference; death occurs as early as four or five hours after commencement of the colic. At the autopsy made under most satisfactory conditions we find the lesions which Renault so well describes in his work on Traumatic Gangrene, lesions marked in the posterior part of the body as the cause of the septicæmia is more or less posteriorly placed. I believe it is no longer necessary to insist on these lesions, thickening to a remarkable extent resulting from the congestion of the tissues of the intestine; a particular odour of the body; colouration of the muscles; the

condition of the spleen ; and the staining powers of the blood exercised on the tissues with which it comes in contact, &c. We have here facts which I have frequently verified. The important point, then, which I wish to impress upon the Society is that, when a congestion is produced in the large intestine of the horse, death occurs rapidly and seems to be the result of *putrid infection*, the germs of putrefaction occurring in the alimentary masses, and being capable of rapid multiplication in consequence of the afflux of blood." This communication was considered of much importance, and its discussion was referred to the next meeting.

M. Mauri "On Trichinosis in Spain," *Revue Vétérinaire de Toulouse*, April, 1879.

Having received some flesh of an animal affected with Trichinosis from Barcelona, and considering the considerable amount of traffic in pork between Spain and France, *M. Mauri* deemed it right to make enquiries in the matter of prevalence of Trichinæ, and in reply to some queries addressed to the Veterinary Inspector in Barcelona, received the following:—"16th March, 1879.—In answer to your letter of 7th March, 1879, in which you ask me the source of Trichinosis in Spain, and how I have been led to suspect its presence, I have the honour to inform you that three years ago a pharmacist of Villar de l'Archevêque, a province of Valence, invited twenty-eight persons to partake of the flesh of a pig which he had just killed. All the party were affected by a disease with uniform symptoms, and six died. Research showed that this was due to Trichinæ, the terrible parasite having been found in the flesh of the human beings and of the pig. My father, M. Jérôme Darder, veterinarian at Barcelona, informed of what had occurred at Villar, applied to the municipality of Barcelona for the purchase of a microscope for meat inspection, handing at the same time a mémoire on Trichinosis and Pig Leprosy. This led to no sanitary measure. But, that year, the political journals having announced the presence of Trichinæ at different parts of Spanish territory, M. Darder again insisted on the necessity of purchase of a microscope. This time the Municipality of Barcelona was assured of the reality of the appearance of Trichinosis in Spain, and requested also, through the journals, that the various places in which the disease had appeared would supply specimens of suspected meat. The municipality of Seville, alone, sent to that of Barcelona two flasks containing well-marked parasites. A microscope was also procured and I was charged with

meat inspection. Shortly afterwards, 1st January, 1879, I reported the first case of Trichinosis, and the second on the 14th of the same month. The pigs came from the provinces of the North of Spain. At the invitation of the municipality, a meeting of leading human and veterinary surgeons of Barcelona was held to confirm the existence of the parasite and to inform the public of it. Now microscopic examination is practised in almost all the slaughter houses of Catalonia and of the principal towns in Spain. In order to lessen the panic which spread through Barcelona and almost completely prevented the consumption of pork, a meeting of the Society of Hygiène was called, which prepared and had printed a small work describing the exact nature of the disease and measures for its prevention. Also infested meat was sent for examination to neighbouring localities and the sanitary inspectors have been called to Barcelona to study the parasite practically, and to practise the microscopic examination of meat. Finally, to remove all doubts on the subject of the existence of this terrible disease, experiments have been made by feeding various animals (dogs, cats, rabbits, &c.), on the trichinosed flesh; in all these experiments the exactitude of the above-mentioned facts was proved.

ANTOINE DARDER."

M. Mauri urges in support of the urgent necessity of a government inquiry into Trichinosis, that an epidemic of the disease has already been reported in the Department of Seine-et-Oise. M. Laboulbène, physician at the Hôpital de la Charité, has presented to the Academy of Medicine, a report "On the first epidemic of Trichinosis observed in France." It showed that Dr. Godivet, of Seine-et-Oise, has just observed serious symptoms in a great number of persons who had eaten some meat from one pig. Of them, twenty in number, sixteen were affected, proving the meat to be the cause, though it looked good, and seemed normal to the naked eye or even when examined with a lens, but when examined with the microscope it showed many Trichinæ. In the interests of public hygiène and commerce and agriculture it is important that this outbreak should be traced to the origin. Hitherto this disease has been scarcely noticed except in Germany, the only record of its appearance in Belgium, in 1866, proved erroneous. "In France," says M. Bouley, in a report to the Consulting Committee of Public Health, "though physicians have been especially forewarned, no case of Trichinosis has ever been met with." We learn that in Italy and Portugal importation of pigs and pork from the United States of

America has been forbidden, it having been found infested with *Trichinæ*.

CHOLESTERINE TUMOUR IN THE BRAIN.

By C. E. SMITH, Army Veterinary Department.

SOME weeks after the infliction of a severe wound in the flank, the recipient, an aged, very vicious mare, showed signs of "Trismus," accompanied by general stiffness. These symptoms abated considerably by the fourth day, the patient lying down and rising with facility; but on the morning of the fifth she was found unable to rise. The fore legs were rigidly extended, the rigidity occasionally giving place to chronic spasms and quivering; the "gluteal muscles" were firm and the hind legs semi-flexed, seeming to be the subjects rather of paralysis than of tonic spasm. Chronic spasms of the cervical muscles also caused a frequent nodding action of the head towards the chest. The whole body surface was morbidly insensible to irritation, and the animal lay almost passive until the evening, sweating profusely during the whole time, when death suddenly resulted from asphyxia.

Autopsy revealed, in addition to the characteristics of this mode of death, considerable congestion of the neurilemma of the crural nerve supplying the injured parts. Some of the morbid appearances in the brain—i.e., the presence of a large quantity of serum, both in its substance and in the lateral ventricle, causing the organ to appear unnaturally large, general congestion, and considerable hardness—were doubtless due, in great measure, to the mode of death; the subservient cause being probably the existence of a rough, orange-coloured body, about the size of and resembling a raspberry, enveloped in the plexus choroides, and embolism of the vessels at the anterior part of the medulla oblongata, between which and the cerebellum, limited anteriorly by the middle peduncles, a considerable deposit of dark red and spongy matter, resembling a heap of almost black granulations, had taken place. This deposit presented a very novel appearance, being mottled with small pearly scales, which, when examined microscopically, proved to be formed of crystallised cholesterine. The basis on which they rested seemed to consist of nucleated cells, possibly blood-corpuscles, and larger, oval, granular cells; its black and red colours depending upon some change in the effused hæmoglobin. The tumour in the plexus choroides, which was placed between the

posterior part of the cerebrum and the corpora quadrigemina, below the pineal body, was evidently of long standing and consisted of crystallised cholesterine, fatty globules, débris, and oval-shaped granular cells. The crystals on being treated with sulphuric acid lost their definite angles and outline, and became iodine-coloured.

The tumour was probably the residuum of some former effusion, but I am unable to reconcile the appearance of so much cholesterine, in the effusion between the "cerebellum" and "medulla" with the recent appearance of the dark red and spongy deposit.

HOMŒOPATHIC TREATMENT OF MILK FEVER OF COWS. A RADICAL CURE.

By SAMUEL GILL, M.R.C.V.S., Hastings.

February 21st, an Alderney six-years-old was delivered of her fourth calf. Twenty-four hours after an easy delivery she began to show all the symptoms of this disease—no appetite, milk, water, or dung. The udder hard, breathing difficult, pulse increased; restless, paddling with her hind legs, and the head thrown from side to side. I visited her again at 3 p.m., and found that she was on the ground, and quite unable to rise, tossing her head about, &c.

Treatment.—Aconitum and belladonna in ten-drop doses every half hour until the symptoms are relieved, then every two hours.

February 23rd, 8.30 a.m.—Very much improved; symptoms have vanished; has made two or three attempts to rise.

Treatment.—Tinct. nux vomica every three hours.

3 p.m.—The animal is up, has dunged and made water, and fed. Medicine continued.

February 24th.—Up this morning, and chewed the cud.

February 25th.—Convalescent, and gives more milk than usual.

IMPACTMENT AND RUPTURE OF THE ŒSOPHAGUS.

By STEPHEN GIBBS, Herne Bay.

I WAS requested by the bailiff of James Amos, Esq., Hilborough, on Sunday night last, to attend a heifer very ill. On examination I found enlargement of the throat and neck, with air effused in the cellular tissue. Inquiry into the his-

tory of the case showed that the heifer had been purchased about eight months previously, and that she had done well until within the last month, when occasionally vomiting came on. No probang or other instrument had ever been used, as in a case of choking.

I ordered her to be killed. The *post-mortem* examination failed to show that any foreign substance had penetrated the part where the rupture existed; and, thinking it a rare case, I have forwarded the specimen to you. Any remarks you may please to make upon the case I shall be glad to read in the *Veterinarian*.

[An examination of the parts showed that for some time dilatation of the pharynx had been gradually going on, and that the coats of the organ, together with the contiguous portion of the œsophagus, had undergone considerable attenuation. This condition of the throat fully explains the difficulty which the animal experienced in deglutating ordinary alimentary matters, as well as their occasional ejection by the mouth. The ultimate stoppage within the throat of a large pellet of partially masticated hay, together with the strong efforts at deglutition, led to a rupture of the thin coats of the pharynx and œsophagus.

The case is one of rare occurrence, and possesses much interest to the pathologist.—EDS.]

WARTY GROWTHS WITHIN THE MAMMILLARY DUCT OF A COW.

Communicated by Mr. FLETCHER, M.R.C.V.S., Sheffield.

WE are indebted to Mr. T. Fletcher for an interesting specimen of obstructed milk duct in a cow, which existed to such an extent as to render amputation of the teat necessary. An examination of the duct showed that its inner surface was studded with warty growths, which so closed in on either side as to reduce the passage to a size which would scarcely admit the introduction of a very small silver probe. Obstruction of milk ducts arises from several causes; but until now we have never observed that warts springing from the mucous lining of the mammillary duct had to be ranked among them.

Amputation of a teat of a milch cow would be scarcely admissible; but in a case like this, where the damming up of the milk would ultimately lead to structural changes of a serious and perhaps complicated nature, an operation of the kind would be warrantable.

Pathological Contributions.

CATTLE PLAGUE.

THIS disease, which continues in various provinces of Russia, has recently appeared in the City of St. Petersburg, and the following measures have been taken for its suppression:—1st. Diseased or suspected animals must be slaughtered with indemnity to the owners; 2nd. Animals found in St. Petersburg shall not be conveyed to public fields; and, 3rd, a most strict veterinary surveillance established in all places of the capital where cattle plague has manifested itself.

In Austria-Hungary the disease has been exterminated in several of the provinces which were last month returned infected.

The Upper House of the Reichsrath has discussed the Bill for the prevention of cattle plague by prohibiting the introduction of Russian cattle, and agreed to an amendment fixing the transition period at five years instead of three. The Lower House by 128 votes against 79 rejected this amendment.

Cattle plague is said to be extinct in Lower Egypt.

PLEURO-PNEUMONIA.

FROM the Netherlands it is reported that there is a still further decrease in the number of attacks of pleuro-pneumonia during the last month.

In this country there is very little alteration in the rate of progress of the disease, as will appear from the return which we publish.

HEALTH OF CAVALRY HORSES AT THE CAPE.

REPORTS have reached us from time to time during the past month that the "horse sickness" of South Africa is making serious inroads among the cavalry horses at the Cape, and that the Dragoons have lost many valuable animals in comparatively a short space of time. Great precautions are being taken to prevent the disease, and strict attention is being paid to the diet of the animals. We hope to learn that the true nature and causes of this fatal malady have been satisfactorily determined on by the veterinary surgeons who have gone out with their respective regiments.

THE CONTAGIOUS DISEASES (ANIMALS) ACT, 1878.

RETURN of the Number of Places in Great Britain upon which contagious or infectious disease (except sheep-scab) has been reported to have existed during the week ended May 10th, 1879, with particulars relating thereto.

PLEURO-PNEUMONIA.

| | Farms or other Places. | | | Cattle attacked. | | Diseased Cattle. | | | | Cases which existed in previous Weeks not reported until this Week. | |
|---|--|---|---|--|---------------------------|------------------|-------|------------|------------|---|------------------|
| | Number reported upon this Week which have been previously reported upon. | Number upon which Fresh Outbreaks have been reported to have taken place during the Week. | Total Number reported upon during the Week. | Remaining diseased from the previous Week. | Attacked during the Week. | Killed. | Died. | Recovered. | Remaining. | Fresh Outbreaks. | Cattle attacked. |
| ENGLAND. | | | | | | | | | | | |
| COUNTY.* | | | | | | | | | | | |
| Buckingham . . . | 1 | 1 | 2 | .. | 3 | 3 | .. | .. | .. | .. | .. |
| Cumberland . . . | 2 | .. | 2 | .. | 2 | 2 | .. | .. | .. | .. | .. |
| Derby . . . | .. | 1 | 1 | .. | 4 | .. | .. | .. | 4 | .. | .. |
| Essex . . . | 10 | 2 | 12 | .. | 4 | 3 | .. | .. | 1 | .. | .. |
| Hertford . . . | 1 | 1 | 2 | 1 | 2 | 3 | .. | .. | .. | .. | .. |
| Kent (ex. Metropolis) . . . | 2 | 1 | 3 | .. | 3 | 3 | .. | .. | .. | .. | .. |
| Lancaster . . . | 10 | 4 | 14 | .. | 16 | 13 | 3 | .. | .. | .. | .. |
| Leicester . . . | 4 | .. | 4 | .. | .. | .. | .. | .. | .. | .. | .. |
| Lincoln, Parts of Lindsey . . . | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. |
| Middlesex (ex. Metropolis) . . . | 4 | 2 | 6 | .. | 3 | 3 | .. | .. | .. | .. | .. |
| Norfolk . . . | 4 | 1 | 5 | .. | 2 | 2 | .. | .. | .. | .. | .. |
| Northampton (ex. Soke of Peterborough). . . | 7 | 1 | 8 | .. | 1 | 1 | .. | .. | .. | .. | .. |
| Notts . . . | 2 | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. |
| Rutland . . . | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. |
| Salop . . . | 2 | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. |

| | | | | | | | | | | | | | | |
|-------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Suffolk . . . | 3 | 1 | 4 | 1 | 1 | 2 | 2 | ... | ... | ... | ... | 1 | 1 | 1 |
| Surrey (ex. Metropolis) . . . | 1 | ... | 1 | 2 | ... | 2 | 2 | ... | ... | ... | ... | ... | ... | ... |
| Warwick . . . | 2 | ... | 2 | ... | ... | 3 | 3 | ... | ... | ... | ... | ... | ... | ... |
| Worcester . . . | 3 | 2 | 5 | ... | ... | 2 | 2 | ... | ... | ... | ... | ... | ... | ... |
| York, East Riding . . . | ... | 1 | 1 | ... | ... | 1 | 1 | ... | ... | ... | ... | ... | ... | ... |
| " North Riding . . . | 1 | 1 | 2 | 8 | ... | 8 | 8 | ... | ... | ... | ... | 1 | 1 | 8 |
| " West Riding . . . | 3 | 6 | 9 | ... | ... | 7 | 7 | ... | ... | ... | ... | ... | ... | ... |
| The Metropolis . . . | 10 | 1 | 11 | ... | 16 | 16 | 16 | ... | ... | ... | ... | ... | ... | ... |
| SCOTLAND. | | | | | | | | | | | | | | |
| COUNTY.* | | | | | | | | | | | | | | |
| Aberdeen . . . | 10 | ... | 10 | 3 | 8 | 7 | 7 | 2 | ... | 2 | 2 | ... | ... | ... |
| Banff . . . | 2 | ... | 2 | ... | 1 | 1 | 1 | ... | ... | ... | ... | ... | ... | ... |
| Edinburgh . . . | 7 | 2 | 9 | ... | 3 | 2 | 2 | ... | ... | ... | ... | ... | ... | ... |
| Fife . . . | 3 | ... | 3 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Kinross . . . | 2 | ... | 2 | 1 | ... | 1 | 1 | ... | ... | ... | ... | ... | ... | 1 |
| Lanark . . . | 2 | 1 | 3 | ... | 7 | 7 | 7 | ... | ... | ... | ... | ... | ... | ... |
| Perth . . . | 2 | ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Renfrew . . . | 2 | 1 | 3 | ... | 2 | 2 | 2 | ... | ... | ... | ... | ... | ... | ... |
| Roxburgh . . . | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| TOTAL . . . | 105 | 30 | 135 | 16 | 92 | 94 | 6 | ... | 8 | 3 | 10 | | | |

FOOT-AND-MOUTH DISEASE.

| | Farms or other Places. | | | Animals attacked. | | Diseased Animals. | | | | Cases which existed in previous Weeks not reported until this Week. | |
|---|--|---|---|--|---------------------------|-------------------|----------|------------|------------|---|-------------------|
| | Number reported upon this Week which have been previously reported upon. | Number upon which Fresh Outbreaks have been reported to have taken place during the Week. | Total Number reported upon during the Week. | Remaining diseased from the previous Week. | Attacked during the Week. | Killed. | Died. | Recovered. | Remaining. | Fresh Outbreaks. | Animals attacked. |
| ENGLAND. | | | | | | | | | | | |
| COUNTY.* | | | | | | | | | | | |
| Cambridge (ex. Liberty of the Isle of Ely). | 7 | 1 | 8 | 504 | 22 | .. | .. | 233 | 293 | .. | .. |
| Derby . . . | 1 | .. | 1 | 3 | .. | .. | .. | .. | 3 | .. | .. |
| Huntingdon . . . | 1 | .. | 1 | 64 | .. | .. | .. | 32 | 32 | .. | .. |
| Stafford . . . | 1 | .. | 1 | 17 | .. | .. | 1 | 5 | 11 | .. | .. |
| York, West Riding . . . | 1 | .. | 1 | 1 | .. | .. | .. | .. | 1 | .. | .. |
| Liberty of the Isle of Ely . . . | 1 | .. | 1 | 1 | .. | .. | .. | 1 | .. | .. | .. |
| TOTAL . . . | 12 | 1 | 13 | 590 | 22 | .. | 1 | 271 | 340 | .. | .. |

GLANDERS.

| ENGLAND. COUNTY.* | | | | Horses attacked. | | Diseased Horses. | | | | Horses attacked. |
|----------------------------|-----|-----|----|------------------|----|------------------|-----|-----|-----|---------------------|
| | | | | | | | | | | |
| Buckingham . . . | 1 | ... | 1 | ... | 2 | ... | ... | ... | ... | ... |
| Essex . . . | ... | 2 | 2 | ... | 1 | ... | ... | ... | ... | ... |
| Hertford . . . | ... | 1 | 1 | ... | 1 | ... | ... | ... | ... | ... |
| Lincoln, Parts of Lindsey | ... | 1 | 1 | ... | 1 | ... | ... | ... | ... | ... |
| Middlesex (ex. Metropolis) | 3 | 1 | 4 | 1 | 3 | ... | ... | ... | ... | ... |
| Notts . . . | 1 | ... | 1 | 2 | 2 | ... | ... | ... | 1 | 2 |
| Worcester . . . | ... | 1 | 1 | ... | 1 | ... | ... | ... | ... | ... |
| York, West Riding . . | ... | 1 | 1 | ... | 1 | ... | ... | ... | ... | ... |
| The Metropolis . . . | 1 | 6 | 7 | ... | 9 | ... | ... | ... | 1 | 1 |
| SCOTLAND. | | | | | | | | | | |
| COUNTY.* | | | | | | | | | | |
| Argyll . . . | ... | 1 | 1 | ... | 1 | ... | ... | ... | 1 | ... |
| TOTAL . . . | 6 | 14 | 20 | 3 | 18 | 20 | ... | ... | 1 | 3 |

TYPHOID FEVER OF SWINE.

| | Farms or other Places. | | | Swine attacked. | | Diseased Swine. | | | | Cases which existed in previous Weeks not reported until this Week. | |
|---|--|---|---|--|---------------------------|-----------------|-------|------------|------------|---|-----------------|
| | Number reported upon this Week which have been previously reported upon. | Number upon which Fresh Outbreaks have been reported to have taken place during the Week. | Total Number reported upon during the Week. | Remaining diseased from the previous Week. | Attacked during the Week. | Killed. | Died. | Recovered. | Remaining. | Fresh Outbreaks. | Swine attacked. |
| ENGLAND, County.* | | | | | | | | | | | |
| Bedford | 2 | 2 | 4 | 3 | 8 | 8 | 3 | .. | .. | .. | .. |
| Berks | 1 | 3 | 4 | 3 | 7 | 10 | .. | .. | .. | .. | .. |
| Cambridge (ex. Liberty of the Isle of Ely). | 3 | 1 | 4 | 1 | 2 | 3 | .. | .. | .. | .. | .. |
| Chester | .. | .. | .. | .. | .. | .. | .. | .. | .. | 3 | 10 |
| Cornwall | .. | 1 | 1 | .. | 7 | 6 | 1 | .. | .. | .. | .. |
| Derby | 2 | 1 | 3 | .. | 1 | 1 | .. | .. | .. | .. | .. |
| Dorset | 1 | .. | 1 | 8 | .. | 6 | 2 | .. | .. | .. | .. |
| Essex | 5 | 3 | 8 | .. | 37 | 30 | 7 | .. | .. | .. | .. |
| Hants | 4 | .. | 4 | 24 | 46 | 67 | 3 | .. | .. | .. | .. |
| Hertford | .. | 2 | 2 | .. | 13 | 7 | 6 | .. | .. | .. | .. |
| Huntingdon | 1 | 1 | 2 | 1 | 1 | 1 | 1 | .. | .. | .. | .. |
| Lancaster | .. | 1 | 1 | .. | 1 | 1 | .. | .. | .. | .. | .. |
| Norfolk | 3 | 5 | 8 | 16 | 50 | 48 | .. | .. | 18 | 3 | 7 |
| Northampton (ex. Soke of Peterborough) | 1 | .. | 1 | 4 | .. | 4 | .. | .. | .. | .. | .. |
| Somerset | 1 | 2 | 3 | .. | 71 | 71 | 1 | .. | .. | 2 | 13 |
| Suffolk | 5 | .. | 5 | 12 | 12 | 23 | 1 | .. | .. | .. | .. |
| Wilts | .. | 1 | 1 | .. | 8 | 7 | 1 | .. | .. | .. | .. |

TYPHOID FEVER OF SWINE—*continued.*

| | | | | Swine attacked. | | Diseased Swine. | | | | Swine attacked. | |
|----------------------------------|-----|-----|----|-----------------|-----|-----------------|-----|-----|-----|-----------------|--|
| | | | | | | | | | | | |
| ENGLAND, COUNTY.*— <i>contd.</i> | | | | | | | | | | | |
| York, North Riding | ... | 2 | 2 | ... | 4 | 2 | ... | 2 | ... | ... | |
| „ West Riding | ... | 4 | 4 | ... | 96 | 96 | ... | ... | ... | ... | |
| Liberty of the Isle of Ely | ... | ... | 1 | ... | 1 | 1 | ... | ... | ... | ... | |
| TOTAL | 29 | 30 | 59 | 72 | 365 | 392 | 25 | 20 | 8 | 30 | |

FARCY.

| | | | Horses attacked. | | Diseased Horses. | | | | | Horses attacked. |
|-------------------|---|-----|------------------|---|------------------|-----|-----|---|-----|------------------|
| | | | | | | | | | | |
| ENGLAND.—COUNTY.* | | | | | | | | | | |
| Sussex | 1 | ... | 1 | 1 | ... | ... | ... | 1 | 1 | 1 |
| The Metropolis | 4 | 6 | 10 | 8 | 7 | 8 | ... | 7 | ... | ... |
| TOTAL | 5 | 6 | 11 | 9 | 7 | 8 | ... | 8 | 1 | 1 |

* Counties include such boroughs and burghs as are locally situated within the limits of the Counties, or, if surrounded by two or more counties, then they are included in the county with which they have the longest common boundary. Berwick-upon-Tweed is included in Northumberland.

Veterinary Department, Privy Council Office, 20th May, 1879.

Facts and Observations.

ROYAL PATRONAGE.—Her Majesty has accepted the office of patroness of the Society for the Prevention of Cruelty to Animals in Turin, which, under the patronage of the Duke of Aosta, is already exercising a very salutary influence in Italy.

HYDROPHOBIA.—The report of the Home for Lost and Starving Dogs states that, though 300,000 dogs had passed through the institution since its foundation, only one case of rabies had been discovered; and though bites were of daily occurrence, not one of the officers had been attacked.

HYDROPHOBIA IN PRESTON.—Another of the children who were bitten by a rabid dog at Preston a few weeks ago has died of hydrophobia. There is, according to the mayor, a reign of terror in the town, notwithstanding that an order has been issued by his worship that till November next all dogs shall be kept under control.—*Globe*.

POISONING OF ANIMALS BY STRYCHNINE.—Dog poisoning by strychnine is reported to be carried on in Kircudbrightshire to a serious extent, and that several farmers have thereby lost many valuable collies. The local papers speak strongly and rightly so against this iniquitous practice, which it would seem is adopted for the preservation of game.

UNCLEANSSED CATTLE PENS. CONVICTION.—The London Chatham and Dover Railway Company was on May 22nd fined at the Chatham Police-court for wilfully infringing the provisions of the Contagious Diseases (Animals) Act, by not cleansing the cattle pens at Chatham Station. The Treasury prosecuted. The stipendiary magistrates inflicted a penalty of £10, and £2 2s. costs.—*Globe*.

HIPPOPHAGY IN VIENNA.—We learn from the *Globe* that a considerable falling off in the consumption of horse flesh has taken place in Vienna, which by some writers is attributed to a growing distaste for this food on the part of the poorer classes, and by others to the great depression which has existed in trade, whereby artisans and others were deprived even of the means of procuring horse flesh, at the rate of 10 kreutzers per pound. The number of horses slaughtered in Vienna for food was, in 1877, 4056, and in 1878, 3770.

THE HORSE DISEASE OF SOUTH AFRICA.—The special Correspondent of the *Daily News* reports that the horse disease, the curse of South Africa, has appeared among the cavalry. Great precautions have been taken to prevent the animals from eating wet grass.

THE VETERINARIAN, JUNE 2, 1879.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

PLEURO-PNEUMONIA IN AMERICAN CATTLE.

WE had, until recently, held the belief that the morbid anatomy of pleuro-pneumonia of the ox was so perfectly well understood by veterinary pathologists, that no difference of opinion was likely to arise when the diseased organs were exposed to view. Sometimes the symptoms of pleuro-pneumonia in the living animal may be obscure, and equally careful, and skilled examiners may not agree in their conclusions respecting the exact indications; but the unaided vision suffices to enable the pathologist to determine on an inspection of the lungs, whether the "characteristic marbled condition of pleuro-pneumonia" is or is not present.

When we were informed that the inspector of foreign animals at Liverpool, had detected pleuro-pneumonia in some cattle from the United States, we accepted the report as a matter of course, not suspecting that any question was likely to arise as to the fact of the existence of the disease; and when portions of the lungs were sent to the Veterinary College for our inspection, we recognised the peculiar characters of the disorder with which we have been familiar from the date of its introduction into this country. Our long experience in regard to the disease here and on the Continent would be worth little if it did not enable us to decide promptly in any case when the diseased organs are placed before us. Our colleagues, who also saw the specimens, experienced no hesitation in deciding that the morbid specimens were portions of lungs from animals which had been affected with pleuro-pneumonia.

The College museum now contains specimens of the diseased lungs, which have been retained, not because they present any remarkable feature beyond those with which we are all well acquainted, but simply for the reason that they

prove the identity of the "lung disease" in America with that of our own country.

Importers whose interests were threatened by the discovery of the existence of disease were, not unnaturally, anxious for further inquiry; accordingly they sought the advice of the three principals of the Scotch colleges, Professors McCall, Walley, and Williams, all of whom arrived at Liverpool about the same time, and inspected the living cattle which had been detained by the inspector, and made *post-mortem* examinations of those which were slaughtered. Professors McCall and Walley agreed that the disease was pleuro-pneumonia. Professor Williams, we understood, dissented from their views, but we did not gather to what extent; and it was not without surprise that we read in the *Times* of May 13th the following account in the Parliamentary intelligence:

"Mr. Mundella asked the Vice-President of the Council, if he was aware that Professor W. W. Williams, of the Edinburgh Veterinary College, had written a letter to Dr. Laidlaw, veterinary pathologist, of Albany, New York, denying in the most emphatic terms that pleuro-pneumonia has existed in any cattle hitherto imported from the United States.

"Whether his attention had been called to a letter of Professor Williams', dated 29th March, in which the following passage occurs:—

"'Since first arrival of 'Ontario' with cattle others have arrived at Liverpool, and I have examined the lungs, said by Privy Council inspectors to have pleuro-pneumonia, and satisfied all who have seen them that no pleuro-pneumonia has arrived here from America; indeed, everybody is surprised that such a gross mistake should have been made. The last lot—seven in number—examined by me had bronchitis, with collapse of the lung, but not a trace of pleurisy nor of pneumonia, yet they were declared by the authorities in London to have typical pneumonia. I have the specimens most carefully preserved, and am ready to show them to the whole world if necessary.'"

The Vice President, in reply, read a memorandum

written by the professional officer of the Veterinary Department, in which the number of cargoes of cattle from America among which pleuro-pneumonia had been detected was stated, and the remark was made that specimens of diseased lungs from the cattle in question had been submitted to several experts who had made pleuro-pneumonia a subject of special study. His Lordship added that since the landing of the cattle from the "Ontario" several other cargoes had been landed, among which cases of pleuro-pneumonia had been detected in Liverpool and London. Any one reading the extract from Professor Williams' letter would conclude that the letter itself was never intended for publication; at least it is not couched in the terms which a scientific man is expected to use in expressing his dissent from the views of his *confrères*. This point, however, is a mere matter of taste, and need not be discussed further; what we are at present chiefly concerned about is the fact that one of our principal veterinary teachers and writers can assert in absolutely unmeasured terms that a disease, which was recognised at once by men of—well, let us say—equal experience, did not exist, and that those who say it did made a "gross mistake." The speaker is not, however, consistent with the writer, for we notice in the report of the proceedings of the Lancashire Veterinary Medical Association, which we published last month, that the chairman called upon Professor Williams for his opinion as to the disease that the American cattle were suffering from, said to be pleuro-pneumonia. Professor Williams stated that he had "seen over 100 of the cattle slaughtered, and examined nearly all the diseased ones. In a few there were lung consolidation and pleural exudations, and taking these lungs by themselves, one would he thought be justified in concluding the disease to be pleuro-pneumonia. In three lungs, however, there were certain differences from what he was in the habit of seeing in the lungs of cattle killed for pleuro-pneumonia in this country. The signs of inflammation extended far beyond the lung consolidation. In other cases it was found that there were abscesses in the lungs, and in some cavities the débris of broken-down lung tissue and blood clots—appear-

ances almost identical with what he had seen in the lungs of foreign horses after rough passages, even from Hamburg to Leith. In others there was no lung consolidation, but pure and very acute pleurisy; and in some, in its first stage, more redness without exudation. Then the cough of the living animals differed from that of pleuro-pneumonia contagiosa, being much more painful and pleural. The cattle had undoubtedly been subjected to some severe cause or causes of chest disease, and taking the whole circumstances and *post-mortem* appearances into consideration he would hesitate very much before giving an opinion that the disease was identical with contagious pleuro-pneumonia. At present he was much rather inclined to think that the disease resembled what he had often witnessed, viz. sporadic pleuro-pneumonia arising from exposure, or even from traumatic causes, such as penetration of the lung by a foreign body. He had also frequently seen pleuro-pneumonia with well-marked pleural adhesions after an accidental introduction of food or medicine into the trachea."

We leave our readers to reconcile the curt denial of existence of any feature of pleuro-pneumonia which was written to Dr. Laidlaw with the admission contained in the speech to the members of the Lancashire Association. For ourselves we have only to express regret that their publication has made it necessary for us to refer to them.

AMERICAN PORK AND TRICHINIASIS.

DURING the last few weeks many statements have been made, more especially in the agricultural papers, relative to American pigs being not unfrequently affected with *Trichinæ*. These parasites reside in the flesh of the animals in their larval condition, but on entering the system of man by the eating of underdone pork, soon acquire sexual development, and ultimately give rise to a most serious disease, and not unfrequently to painful death. The subject has attracted so much public attention as to be brought before Parliament by Mr. King-Harman, the member for Sligo, who in answer to

his questions received a reply from Lord George Hamilton that the Government were without information as to imported American pigs being affected with *Trichinæ*; but that an Order of Council had been issued for their slaughter at the ports of landing, as cases of typhoid fever had been reported to exist among them.

The question of American pigs being the bearers of *Trichinæ* remains still to be determined, and we feel assured that the Veterinary Department will give all the attention to the subject which its importance demands. We do not desire to join the ranks of the alarmists; but until we have positive information one way or other, we think that it behoves all buyers of American pork to see that it is *thoroughly well cooked* before it is partaken of. If strict attention be paid to the cooking or the pickling of infected pork it may be eaten with almost perfect safety.

We may further remark that it is our intention to institute an inquiry into the truth of the statements, and if necessary to carry out a series of experiments with the view of laying the result before the public.

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—HOR.

Mélanges de Pathologie Comparée et de Teratologie. Per O. LARCHER, M.D. (Paris), &c.

THIS work pleases us much. It collects and arranges matter of a valuable nature to the scientific medical worker; it also contains much that is new, and explains much that is old. It consists of papers which from time to time have been read by the author at meetings of the numerous learned societies of which he is a member, and of *memoires* now for the first time made public. We are struck by the range of the author's reading, his cases being drawn from English, German, and French sources. Thus he has been enabled to treat of diseases of birds very satisfactorily in the following papers:—On foreign bodies in the digestive track (including parasites); On affections of the female genera-

tive organs, of the male generative organs, of the circulatory apparatus, of the urinary system, of the organs of locomotion, of the apparatus of vision, of the nervous system. These afford a good basis for study of the pathology of Aves, and are supplemented by several other papers. Among teratological subjects we note two papers on the anomalies of the external ear, and single papers on the following subjects:—Malformations of the beak of birds; pygomelia in birds; congenital malformations of the heart in animals; median fissure of the inferior maxillary arch in domestic mammals.

Some conditions in the horse are noticed in special papers, as those on melanosis of the liver, and spontaneous rupture of the primitive aorta.

We have said enough to show the scope and line of this useful collection of papers, and hope our readers will avail themselves of the information it conveys. J. H. S.

Extracts from British and Foreign Journals.

THE LIFE OF A PLANT.

PROFESSOR BENTLEY, before a very fair audience, of which his students formed a part, delivered his lecture, which had been for some time announced, on the "Life of a Plant." The Professor kept strictly to his subject, with an occasional digression about the value of the science of botany, and the pleasure involved in its cultivation. He considered the plant as a human being, and showed how it was born, how it grew, and how its existence was maintained. After a rapid sketch of elementary structure, he described the organs of nutrition—the stem or ascending axis, the root, and the general characters of the leaf. The food required for plants was taken up either from the earth—but always dissolved in water—or from the air as gas or vapour, through the medium of the leaves. Epiphytes, as the Orchids, derived their food entirely from the surrounding air, while parasites depended for their nutrition on the plants upon which they grew. The food supplied was organic and inorganic; of the former carbon existed in the largest proportion, then oxygen, hydrogen, and nitrogen. These are common to all plant life; the nitrogen is chiefly absorbed as ammonia, and the rest as carbonic acid and water, which last is a food in itself, besides being the vehicle for other aliment. One of the most interesting points

in the lecture was the description of the way in which inorganic matter varied in different plants, and the practical value of the knowledge of this fact in agricultural botany. The rotation of crops depended on this alone. Other illustrations of the subject must be left unnoticed, and they may be left safely, as the summer session is even now commencing, and soon students will be able in the Gardens of the Regent's Park to hear about absorption, circulation (a term of which the Professor disapproves), respiration, and assimilation. Throughout the lecture the strongest prominence was given to the doctrine that nothing whatsoever *can* be absorbed in an undissolved condition. The report, therefore, of diatoms discovered in the organism must be treated as a myth. Secondly, Professor Bentley enlarged upon the paramount importance of light. The grand compensating effect between the absorbing and respiratory influences of animal and plant life cannot go on without light. Diminish this solar agency and those changes which tend to purify the atmosphere, to fertilise the soil, and to regulate the rainfall, are injured or arrested. Plants want light, and in this humanity resembles the vegetable creation. We want light, too, both physical and intellectual.

THE VIVISECTION ACT.

THE report of Mr. G. Busk, the inspector under the Vivisection Act, showing the number of experiments performed on living animals during the year 1878, has just been issued. The total number of licences in force during any part of the year 1878 was 45; but as, of these, it would seem that 18 were not acted upon, the number of licencees who need be specified is reduced to 27, a list of whom is given, together with a list of those licencees who do not appear to have performed any experiments. The total number of experiments performed under these 27 licences and the certificates, according to the returns received from each licencee, was about 481. Of these, 317 were performed under the restrictions of the licence alone, and the remainder under special certificates. Upon full consideration of all the experiments, and the mode in which they were performed, the inspector is of opinion that the extreme number of cases in which an amount of suffering worth notice was inflicted could not have exceeded 40. In 24 of these cases the animals did not suffer from the actual experiment, but, as in the experiments instituted for the investigation of certain epizootic diseases, from the after consequences only. In 16

cases alone, and these were confined to two sets of experiments, is there reason to believe that any considerable amount of suffering was directly inflicted.

As regards the experiments in which the animal is allowed to survive the state of anæsthesia, the amount of suffering, where any at all was inflicted, must have been very slight, in the majority of cases not being greater probably than that which necessarily attends the presence and the healing of a wound of the integument. As a matter of fact, of the experiments performed under the licence alone, at least 200 appear scarcely to come within the scope of the Act at all, and might probably have been performed independently of it, as not being calculated to give pain ; but as they were performed under the licence, they are included in the return. The number of experiments or demonstrations of physiological facts performed under certificates is 47. This number, distributed amongst 11 physiological schools, gives an average of less than five for the instruction of each class, although the discretion of the teachers is unlimited as to the number of such demonstrations they may consider necessary.

The inspector for Ireland reports that the total number of licences in force during any part of the year 1878 was ten ; in five instances the license was not acted upon ; the number of experimenters was consequently reduced to five. The total number of experiments under the five licences amounted to 24.

Of the 24 experiments performed, four were under the restrictions of the licence alone, and the remaining 20 under certificate for experiments under anæsthetics, illustrative of lectures. From the returns received from the several experimenters it would appear that in no case has pain been inflicted, and that some of the experiments might have been legally performed without the licence under the Act.—*The Globe*.

HYDROPHOBIA.

THE following pertinent letter on this important subject has appeared in the *Times*. We give insertion to it as not only showing the continuance of rabies among dogs to a serious extent, but the necessity for invoking further legislation with reference to the prevention of the malady.

Recent experience has shown that the virus of rabies may, even in dogs, remain latent in the system for a year, or even more, and that the same property is possessed by it even when it has been transmitted to the human subject.

To the Editor of the Times.

SIR,—Yesterday I saw two cases of hydrophobia, a disease which is perhaps the most painful to witness of all which afflict humanity. They occurred in children, who with three other persons had been bitten, along with dogs and other animals, by the same rabid dog about a month ago. One of these children I have just heard is dead. The mental condition of the three persons as yet unaffected may be left to the imagination.

Formerly the great majority of even old practitioners had never seen a single case of hydrophobia; but the disease has increased very much of late years, and especially in this part of the country, although I am not able to furnish accurate statistics on the subject. I myself have now seen five cases, and my experience of yesterday must be almost unparalleled.

I venture to invoke the powerful assistance of the *Times* in a crusade against rabies in dogs; and in order to make this letter as brief as possible I refer to an able article, by Sir Thomas Watson, in the *Nineteenth Century* for December, 1877. He recommends, along with other eminent men, that with the aid of legislation there should be enforced a rigid quarantine of all dogs for several months, by which this disease, the only known source of hydrophobia, could be effectually stamped out.

Preston, May 14th.

Yours, &c.,

M.R.C.P.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

MONTHLY COUNCIL, Wednesday, May 7th, 1879. Present, H.R.H. the Prince of Wales, K.G., President, in the chair.

VETERINARY REPORT.

Colonel Kingscote, C.B., M.P., Chairman, reported the receipt of reports from the Royal Veterinary College on investigations made, and the Committee recommended that the members be applied to for the expenses incurred. The Committee having received and considered two applications from members of the Society asking for remission of fees for veterinary inspection, were of opinion that the funds of the Society should not be called upon to defray the same.

Colonel Kingscote supplemented this report by stating that at the annual dinner of the Royal College of Veterinary Surgeons on Monday last, great satisfaction was expressed by the head of that College, as well as by heads of the Royal Veterinary College and the Edinburgh Veterinary College, that the Royal Agricultural Society had resolved to offer prizes to encourage students in the study of cattle pathology. A great wish was expressed by Principal Williams, of the Edinburgh College, that the

Society's prizes should be held by students there; but, as he (Colonel Kingscote) ventured to suggest on that occasion, this would be treading on the toes of the Highland and Agricultural Society. However, as that Society was now altering its arrangements with regard to the Veterinary Schools, he begged to move "that it be referred to the Veterinary Committee to consider whether prizes, open to all the veterinary schools, can be offered in conjunction with the Highland Society."

The *Earl of Ravensworth* pointed out that if the prize scheme were extended to Edinburgh, it would only be just to extend it to Dublin.

Colonel Kingscote replied that there is no veterinary college in Dublin.

Mr. Dent pointed out that the Society should enter into communication with the Highland and Irish Societies, with a view of ascertaining whether the three bodies could combine to give prizes to students of cattle pathology in any portion of the United Kingdom. At the same time he pointed out that the providing of facilities for giving these students a practical knowledge of cattle diseases, was a matter of greater importance than the offer of prizes.

Earl Spencer agreed as to the advisability of extending to Ireland the advantages extended to England and Scotland. It was true that Ireland possessed no veterinary college, although one was very much needed there; but probably students would present themselves from the Agricultural College at Glasnevin to compete for the prizes in question.

Colonel Kingscote said that the subject to which *Mr. Dent* had alluded had been, and was still being, very much canvassed both by the Royal College of Veterinary Surgeons and the Royal Veterinary College. It was a most difficult question, for although the Royal Veterinary College were prepared to take diseased animals free of charge, in practice this offer was not accepted. The matter would not be lost sight of, but there were immense difficulties in the way.

The report of the Committee was then adopted.

The Secretary was authorised to make arrangements in regard to the appointment of veterinary inspectors for the London Exhibition.

A letter was read from Lord Lyons in reference to the forthcoming exhibition, stating that at the request of H.R.H. the Prince of Wales it had been brought under the notice of the French Government; and it was announced that animals would probably be sent for exhibition from the national studs.

ROYAL COLLEGE OF VETERINARY SURGEONS.

ANNUAL GENERAL MEETING, HELD MAY 5TH, 1879.

THE Thirty-sixth Annual Meeting of the Members Politic and Corporate of the Royal College of Veterinary Surgeons was held by advertisement, and in accordance with the provisions of the Charter, on the first Monday in the month of May, being the fifth day thereof, 1879, at the College, 10, Red Lion Square, Holborn, London.

GENL. SIR FREDERICK FITZWYGRAM, Bart., President, in the chair.

Present:—Professors Pritchard, Williams, and Axe; James Collins, Esq., Principal Veterinary Surgeon to the Army; Messrs. Jn. Atkinson, T. Avis, G. Balls, jun., G. A. Banham, T. D. Barford, H. T. Batt, T. G. Batt, R. B. Beman, W. G. Boswell, T. Briggs, Jas. C. Broad, Alfred Broad, Jas. Broad, jun., Jas. Hall Brown, J. S. Brunskill

J. R. Carless, Jn. G. Cattrall, Alb. R. Charles, T. G. Chesterman, Wm. Clark, M. Clark, F. J. Covington, P. S. Cowan, Jas. Cowie, Josh. Davies, E. M. Davy, E. L. Dixon, E. C. Dray, E. A. Drewe, Hy. Dyer, J. W. Evans, Edw. Faulkner, G. Fleming, Jas. Freeman, Jn. Gerrard, H. D. Gibbings, J. M. Gillingham, T. W. Gowing, T. W. Gowing, jun., Thos. Greaves, Jas. Hall, G. A. Hall, H. J. Hancock, M. J. Harpley, W. Stanford Harrison, F. T. Hart., W. Helmore, J. Woodroffe Hill, T. Hopkin, Jn. Howard, D. Hutcheon, Osborn Hills. Wm. Hunting, J. T. King, Alex. Lawson, Josh. Leather, P. Martial, M. Mence, Jas. Moon, Jas. Moore, Thos. Moore, M. E. Naylor, J. F. Oliver, Alf. J. Owles, W. F. Peacock, Hy. Peele, T. S. Price, A. B. Proctor, Wm. Rogers, Rd. Rowe, Jas. Rowe, Jas. Rowe, jun., F. G. Samson, C. C. Sanderson, W. D. Sartin, H. K. Shaw, C. Sheather, H. J. Simpson, F. Smith, W. South, D. R. Sowerby, Percy B. Spooner, F. J. Stanley, Jn. H. Steele, T. W. Talbott, P. Taylor, T. Taylor, W. A. Taylor, T. Thursfield, W. S. Wallis, Robt. Ward, Jn. Ward, C. J. Whitworth, G. Williams, E. Woodger, F. W. Wragg, and the Secretary.

The *Secretary* read the notice convening the meeting; also the minutes of the previous meeting, which were confirmed.

The *Secretary* read the notice in the London Gazette convening the meeting,

The minutes of the previous meeting were read and confirmed.

The *Secretary* read the following Annual Report :

The Annual General Meeting of the Royal College of Veterinary Surgeons was held on May 6th, 1878, in accordance with the provisions of the Charter, when the following gentlemen were elected members of Council in the place of those who retired by rotation, viz. :—General Sir F. W. Fitzwygram, Bart., James Collins, Wm. Henry Coates, Geo. Morgan, James Freeman, and Alfred Brooke Proctor.

The Council have to report that at their first meeting, held on June 4th, General Sir F. W. Fitzwygram, Bart., was again unanimously re-elected President, and the following gentlemen were elected Vice-Presidents :—Messrs. T. W. Gowing, Henry Joseph Cartwright, S. H. Withers, R. L. Hunt, Jas. McCall, and Geo. Williams; Mr. S. H. Withers, Treasurer, and Mr. W. H. Coates, Secretary.

In accordance with the resolution passed at the last Annual Meeting, "That the Government be solicited to assist the Royal College of Veterinary Surgeons in obtaining a suitable building worthy of the profession," the following petition, which had been submitted to and approved by the Council, was laid before His Grace the Duke of Richmond by the Committee appointed to act as a deputation :

ROYAL COLLEGE OF VETERINARY SURGEONS.

10, RED LION SQUARE.

The Petition of the Royal College of Veterinary Surgeons to Her Majesty's Government for aid in order to render its services more extended and beneficial to Medical Science in general, and especially to Agriculture and the Public.

The prayer of the petitioners sheweth that in every country, and more especially in our own, the veterinary profession is of direct and great public utility, and that the value of its services is yearly increasing with the rapidly rising value and number of horses, cattle, and other useful domesticated animals. That while the services of the profession are sought for to assist in the multiplication and perfecting of the different breeds of these animals, and to indicate practically and scientifically

how this may be best and most economically effected, its assistance is of special importance in the prevention and cure of the many accidents and disorders to which such animals are liable—a liability which becomes increased with their higher breeding and more artificial treatment. In the prevention and suppression of contagious maladies among animals the veterinary profession can lay strong claims for recognition as a useful public body; and as some of these disorders are transmissible to the human species and produce serious, oftentimes fatal, disease in it, its services to human sanitary police are most essential and important.

In this direction, then, not only does veterinary science assist in increasing the number, utility, and value of the domesticated animals, and protect them from the evil consequences of this domestication and improvement, but it remedies their diseases and accidents; and in preventing or suppressing the destructive contagious maladies to which they are liable, it preserves a large portion of the national wealth from loss, while it protects the public food supply, and guards the community from the dangers attending the consumption or use of diseased flesh, milk, or other animal products.

In addition to being the medical and sanitary guardian of the immense animal wealth of the country, veterinary science is also largely concerned in the promulgation of just views as to the humane treatment of animals in health as well as in disease; and it devotes itself in a special manner to the elucidation of the many animal disorders, their nature and causes, as well as the medical measures which will most economically and effectively prevent or cure them. As an exact knowledge of many at present obscure maladies of mankind can only be gained by studying the same or analogous diseases in animals, veterinary pathology in this way becomes intimately allied with human pathology, and can greatly assist in advancing it, and thus materially aid in preventing, or at least alleviating, human suffering.

The great value of veterinary science in these different directions has been recognised in Europe only at a comparatively recent period; but this recognition has impelled every European country, except our own, to take this science under its especial and immediate care. Consequently, we find all these countries in possession of schools, several on a large scale, wherein veterinary science is cultivated and taught by eminent men; the schools being maintained by the respective governments at the public expense, as they were instituted for the public benefit.

This country has been the last to estimate the value of veterinary science, and it has not yet recognised, except to the most insignificant extent, the benefits it has conferred, and may continue to confer, upon civilisation and humanity.

The four veterinary schools in England and Scotland are private institutions, each belonging either to a single individual or the property of subscribers, who receive the value of their subscription in advice or medical treatment of their animals.

Notwithstanding this disadvantage, and the lack of Government aid, the veterinary profession in Britain determined to exert itself in promoting veterinary education and in maintaining the scientific knowledge of its members at as high and uniform a standard as was possible under the circumstances. Acting upon this determination, in the year 1844 it petitioned Her Majesty's Government for a Charter of Incorporation which would enable it to exercise the powers of a corporate body, and utilise these powers to the advantage of the veterinary profession and the public.

The prayer of their petition was granted, and the Royal College of

Veterinary Surgeons was instituted in 1844. Since that date, up to the present time, this corporation, while labouring under some great disadvantages—the chief of which was its want of funds and public support—has discharged to the best of its power the ever-increasing and important functions imposed upon it by the terms of the Royal Charter of Incorporation.

While endeavouring to further the interests of its members, its principal and most responsible duty has been the promotion of veterinary education, by its instituting, from time to time, such tests of professional knowledge in those who sought its diploma, as would not only protect its own reputation as a degree-conferring body, but would also afford a guarantee to the public that the holders of this diploma were competent and fully qualified veterinary surgeons. These tests have been applied to candidates for the diploma by the highest medical and veterinary authorities this country has produced, and the candidates who come from the schools of England and Scotland are submitted to a severe and uniform examination. The subjects in which the students are instructed, as well as the period of study, are regulated by the Royal College, and everything pertaining to the advancement of veterinary medicine, and its utilisation for the public good, is carefully considered by it.

Since its incorporation in 1844 the Royal College of Veterinary Surgeons has provided the country with upwards of THREE THOUSAND qualified practitioners in animal medicine and surgery. These graduates have not only practised their profession with advantage to the three kingdoms, but every part of our great empire has benefited from their presence, while in the army they have served the country in peace and in war.

The institution which has done so much public and professional service could not be maintained without considerable expense and much sacrifice of time and thought on the part of the profession. It has never received any extraneous assistance; but has existed on its own efforts and the examination fees obtained from its graduates. The latter has been necessarily fixed at the lowest possible sum, so that they might not deter poor but worthy men from joining the ranks of a profession which had to fight its own way to position and appreciation.

But with the rapidly developing demands of medical science, the greater amount of knowledge required from members of the veterinary profession—due to the higher and more exacting services they are called upon to render—and the yearly increasing expenses incurred by the Veterinary Corporation in maintaining an ever-rising standard of efficiency, it is found that the past rate of progress cannot be sustained without some help from the country. The annual income is not sufficient to defray the heavy expenses attending the graduation of students, and keep up a suitable building for the work of the Royal College. The place where its business is now transacted, and where it has its home, is every way inadequate to its requirements, and does no credit to a country which possesses the finest and most valuable domesticated animals in the world. It is situated in one of the most undesirable parts of London, has no accommodation, and is destitute of a museum for instructional purposes, and of other facilities which are urgently needed, if veterinary medicine in this country is to keep pace with that in other countries.

In this crisis in its history, the Royal College of Veterinary Surgeons of Great Britain and Ireland feels itself itself compelled to appeal, for the first time, to Her Majesty's Government for countenance and support in its laudable desire to still further benefit the country by

continuing to improve veterinary education, as without this countenance and support such improvement is now impossible.

It is obvious that veterinary medicine is as yet in its infancy; it has only of late years begun to yield some of the benefits it will undoubtedly confer when properly cultivated and fostered. Up to this time the Royal College has exerted itself to the utmost to serve the public interests without asking for any acknowledgment or compensation from the public; but in the circumstances in which it is now placed it can no longer attempt to do so with dignity to itself or advantage to the community without aid from the country it has so well served and so largely benefited. Though these benefits have been so great and so manifest, yet of all the learned bodies the Royal College of Veterinary Surgeons would appear to be the last to obtain recognition or assistance.

Your petitioners would humbly beg to draw attention to the fact, that in 1799 the Parliament of this country voted the sum of £15,000 for the museum of the Royal College of Surgeons, and that in 1806 another sum of £15,000 was voted in aid of the erection of an edifice for the display of an arrangement of the Hunterian collection; while a third grant of £12,500 for the same purpose was subsequently voted, and in 1847 another sum of £15,000 in aid of an extension of the museum buildings. Your petitioners may be also allowed to refer to the fact that the Royal College of Physicians hold premises under the Government at a merely nominal rent, while the Government has found a local habitation for nearly every scientific society in London.

Your petitioners would beg most earnestly to assure Her Majesty's Government that they are only actuated by an unselfish and patriotic desire to directly benefit the country in soliciting its assistance, and whatever aid it may be pleased at present to bestow will be repaid tenfold hereafter.

The Royal College of Veterinary Surgeons is anxious and willing to continue its labours for the public good, but it feels that, in return, it has a strong claim for recognition in what it has already accomplished and what it now seeks to achieve.

It therefore humbly prays that Her Majesty's Government will graciously take into consideration the prayer of the petitioners, and favorably respond by granting either a building which would meet the requirements of the Royal College, to be maintained at the cost of the Corporation, or a sum of money sufficient to provide such premises.

The Committee having obtained an interview with His Grace the Duke of Richmond, President of the Privy Council, brought up the following report:

The Committee appointed by the Council reported that they obtained an interview with His Grace the Duke of Richmond, President of the Privy Council.

The Committee urged the claims of the veterinary profession on the favorable consideration of the Government. His Grace fully admitted those claims and promised to bring them before his colleagues. But he added, "In the present state of the Exchequer, and having regard to the present demands which are being made by the present crisis on the National Funds, I fear I must say that the present is not a favorable opportunity of pressing your claims."

The Committee then asked the assistance of His Grace in obtaining rooms in one of the Government buildings in case no pecuniary grant could be made at present. His Grace said he was afraid all the Government buildings were at present fully occupied, but promised to make inquiry.

His Grace then asked what sum in the way of grant the Royal College of Veterinary Surgeons would require. The answer given was to the effect that the purchase of ground and erection of suitable premises would cost about £6000; that nearly £2000 had been subscribed; that £2000 might be borrowed on the security of site and buildings if the Government would give £2000; that the interest of the borrowed money would be about equal to the rent at present paid for the inadequate premises in Red Lion Square.

The deputation, having thanked His Grace for the kindness with which he had listened to them, withdrew.

The Committee thought that the application might be renewed with advantage about the time when the estimates for the year were being prepared.

The next important subject brought under the consideration of the Council was the appointment of a Committee to confer with the Highland and Agricultural Society, with a view to the discontinuance of their examinations, and to adjust terms of agreement. The Highland and Agricultural Society of Scotland proposed the following arrangement for admitting the Society's Certificate-holders as Members of the Royal College, and so terminating the examinations of that Society :

1. The Royal College of Veterinary Surgeons to hold the Examination of the Highland and Agricultural Society as sufficient, and to admit their Certificate-holders without further examination.

2. All the Highland and Agricultural Society's Certificate-holders passed before 1871 to be admitted Members of the Royal College free; those passed in 1872 to pay one guinea; and those passed in the following years, to 1878, to pay a sliding scale from two to seven guineas.

3. Those students now enrolled at any of the Teaching Schools who may pass for the Society's Certificate, to be enrolled Members of the Royal College of Veterinary Surgeons on payment of seven guineas.

4. That the Society's Examinations shall terminate in three years from the time this arrangement is adopted.

5. The Highland and Agricultural Society agree to the above arrangements on the understanding that the Annual Meeting of the Royal College of Veterinary Surgeons shall be held in Edinburgh once in three years; and,

6. That if at any time the Royal College of Veterinary Surgeons should apply for a penal clause against persons practising the veterinary art without a legal qualification, the holders of the Highland and Agricultural Society's Certificate shall be exempted from such penal clauses.

The Committee having received these proposals, recommended for the acceptance of the Council of the Royal College of Veterinary Surgeons Clause 1. Also Clause 2, except the word "free" in line 5. As the admission of the holders of the Highland and Agricultural Society's certificate without examination could not be effected under the present Charter; and as the application for and obtaining a new Charter would involve considerable expense, the Committee considered that each member admitted should pay a registration fee of £1 1s., being the amount now paid for registration by those who pass the examination of the Royal College of Veterinary Surgeons.

The acceptance of Clauses 3, 4, and 5, was also advised.

The Committee saw great reason to object to Clause 6, and strongly recommended that it should not be agreed to, as it would create a body with legal rights outside the body corporate.

After considerable discussion, it was ultimately agreed that the Committee enter into communication with the Highland and Agricultural Society, and propose the following terms :

Articles of Agreement made and entered into this 20th day of January, 1879, between the Highland and Agricultural Society of Scotland, incorporated by Royal Charter or Letters Patent, bearing date the 17th day of May, 1787, by the name and title of The Highland Society of Scotland at Edinburgh, and of new incorporated by the name and style of The Highland and Agricultural Society of Scotland, by Charter or Letters Patent, granted the 18th day of June, 1834 (and hereinafter called "the Society"), of the one part, and The Royal College of Veterinary Surgeons, incorporated by Royal Charter or Letters Patent, dated the 8th day of March, 1844 (and hereinafter called "the College"), of the other part. Whereas the Society have, from 1823, instituted lectures on veterinary science and medicine, and appointed examiners to examine students therein, and, until 1844, granted to such students certificates of proficiency. And whereas, in 1848, the Society reconstituted its Board of Examiners and have since granted annually certificates of qualifications. And whereas it was amongst other things provided by the said Letters Patent, of the 8th day of March, 1844, that the concerns of the College should be directed and managed by a Council, to be constituted as therein mentioned. And further that the said Council should and might make any orders, rules, and bye-laws, for fixing and determining amongst other things the times, places, and manner of examining students who should have been educated at the Royal Veterinary College of London, or the Veterinary College of Edinburgh, or such other veterinary colleges as therein mentioned, and who might be desirous to become Members of the College, and for regulating the nature and extent of such examinations, and for the appointment of persons to examine and determine upon the fitness and qualifications of such students, and for the admission or rejection of such students as Members of the College, and for fixing and determining the sum and sums of money to be paid by such students, either previous to their examination or upon their admission as Members of the College or otherwise, and generally touching all other matters relating to or connected with the College, and the same orders, rules, and bye-laws from time to time to alter, suspend, or repeal, and to make new orders, rules, and bye-laws, in their stead, as the Council should think most proper or expedient, so as the same were not repugnant to the Letters Patent now in recital, or to the laws of the realm. And whereas by a Supplemental Charter, or Royal Letters Patent, dated the 23rd day of August, 1876, it was amongst other things declared that with certain exceptions therein mentioned, and not material for the purposes of these presents, the College and the Council of the same should have and continue to have all such and the same jurisdiction, powers, and authorities for, and with respect to, the government of the College, and for *inter alia* the making, ordaining, confirming, annulling, or revoking orders, rules, and bye-laws, and transacting and ordaining all other matters and things whatsoever for the regulation, government, and advantage of the College, as the College and the Council thereof respectively had under or by virtue of the said hereinbefore recited Charter or Letters Patent, or in any other lawful manner. And whereas, in pursuance of the powers conferred upon the College or the Council thereof by the said Letters Patent respectively, certain bye-laws have been made with respect, among other things, to the examination of candidates for the diploma of the College, and such bye-laws are still in force. And

whereas the following arrangement has been made and entered into between the College and the Society, with a view to the admission of the holders of the Certificates of the Society as Members of the College, and also for the purpose of terminating the examinations heretofore held by the Society. Now these presents witness, and it is hereby agreed and declared, and in particular the College (so far as the stipulations and provisions hereinafter contained are to be performed or observed by them) do hereby for themselves and their successors covenant and agree with, and to the Society and their successors. And the Society (so far as the stipulations and provisions hereinafter contained are to be performed and observed by them) do hereby covenant and agree with and to the College and their successors in manner following (that is to say) :

1. Every or any holder of a Certificate granted by the Society in manner aforesaid since 1848, shall, on application and on payment of such fees as are hereinafter specified, be admitted as a Member of the College, and shall not be required to submit to any further examination previous to such admission.

2. Every holder of a Certificate granted by the Society as aforesaid, from 1848 to 1872, shall be admitted as a Member of the College on payment of a registration fee of one guinea.

3. All candidates for such admission to whom such Certificates as aforesaid shall have been granted since the year 1872, shall, in like manner, without being required to submit to any further examination previous thereto, be entitled to such admission on payment of fees according to the following scale or table (that is to say) :

(a) Every holder of a Certificate granted during the year 1873 on payment of two guineas.

(b) Every holder of a Certificate granted during the year 1874 on payment of three guineas.

(c) Every holder of a Certificate granted during the year 1875 on payment of four guineas.

(d) Every holder of a Certificate granted during the year 1876 on payment of five guineas.

(e) Every holder of a Certificate granted during the year 1877 on payment of six guineas.

(f) Every holder of a Certificate granted during the year 1878 on payment of seven guineas.

4. All students now enrolled at any of the teaching schools connected with the Society to whom such Certificates as aforesaid shall hereafter be granted, consistently with the provisions of these presents, shall be admitted and enrolled as Members of the College on payment of a fee of seven guineas.

5. The examinations heretofore held by or on behalf of the Society shall be discontinued as from the 1st day of January, 1876, but this stipulation shall not preclude or prevent the Society from holding examinations according to its existing bye-laws or regulations for persons already admitted as students of the Society who may hereafter elect or claim to be examined by the examiners thereof, in preference to submitting to examinations by or on behalf of the College.

6. The College and Society respectively shall alter, vary, and annul their existing orders, rules, and bye-laws, if and so far as may be necessary to give full and complete effect to this agreement, and shall also, if required, apply for and use their best endeavours to obtain Supplemental Charters for the same or the like object.

7. If any doubt, difference, or dispute shall hereafter arise between the parties hereto, or their successors, touching these presents or the construction hereof, or any clause or provision herein contained, or the rights, duties, or liabilities of either party in connection therewith, the matter in difference shall be referred to two arbitrators or their umpire, pursuant to and so as with regard to the mode and consequences of the reference, and in all other respects to conform to the provisions in that behalf contained in the "Common Law Procedure Act, 1854," or any then subsisting statutory modification thereof. In witness whereof the Society and the College respectively have hereunto caused their respective Seals to be affixed the day and year first above written, &c.

This agreement having been duly considered, was signed and sealed ; and it was then resolved—"That the Committee should apply to the Privy Council for a Supplementary Charter, which would enable the Council to carry out its provisions."

The following is a draft-copy of the Charter now before Her Majesty's Government :

SUPPLEMENTAL CHARTER OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

Victoria, by the Grace of God, of Great Britain and Ireland, Queen, Defender of the Faith, to all to whom these Presents shall come, Greeting :

Whereas, by Our Royal Charter or Letters Patent, granted on the 8th day of March, in the seventh year of Our reign, We were graciously pleased to grant, ordain, and declare that Thomas Turner, William Joseph Goodwin, Thomas Mayer, William Dick, William Sewell, Charles Spooner, and James Beart Simonds, together with such other persons as then held certificates of Qualification to practise as Veterinary Surgeons granted by the Royal Veterinary College of London or by the Veterinary College of Edinburgh respectively, and such other persons as then were or might thereafter become Students of the Royal Veterinary College of London, or of the Veterinary College of Edinburgh, or of such other veterinary colleges, corporate or unincorporate, as then were or thereafter should be established for the purposes of education in veterinary surgery, whether in London or elsewhere in the United Kingdom, and which We or our Royal Successors should under our Sign Manual authorise in that behalf, and should pass such examination as might be required by the orders, rules, and bye-laws which should be framed and confirmed pursuant to such Charter or Letters Patent, should be members of and form one body politic and corporate by the name of "The Royal College of Veterinary Surgeons," by which name they should have a perpetual succession and a common Seal, with such powers as in the same Charter mentioned :

And whereas by Our Royal Charter or Letters Patent secondly granted on the 23rd day of August, in the fortieth year of Our reign, We did make further provision for the government and regulation of the affairs of the said College :

And whereas the said College is now regulated and governed by and according to the provisions of Our said two recited Charters or Letters Patent, and also by and according to certain Bye-laws made by the said College for its regulation and better government ; and the governing body of the said College consists of a Council of not more than thirty-one nor less than twenty-four members of the said College :

And whereas the Highland and Agricultural Society of Scotland was

incorporated by Royal Charter or Letters Patent, granted the 17th day of May, 1787, by the name and title of "The Highland Society of Scotland at Edinburgh," and of new incorporated by the name and style of "The Highland and Agricultural Society of Scotland," by Charter or Letters Patent, granted the 18th day of June, 1834:

And whereas the said Society have since the year 1823 instituted and caused to be delivered Lectures on Veterinary Science and Medicine, and have from time to time appointed examiners to examine students in Veterinary Science and Medicine, and have since the year 1848 been in the habit of granting annually to students passing satisfactorily the examinations held by such examiners, certificates of qualification to practise the Veterinary Art:

And whereas terms of arrangement have been agreed to between the said Society and the said College, whereby the said Society have bound themselves not to hold any further examinations in Veterinary Science and Medicine, or to grant any further certificates of qualification to to practise the Veterinary Art, except in respect of persons who on the 1st day of January, 1879, were admitted students of the said Society, and the said College have bound themselves, so far as they lawfully could, to endeavour to obtain powers to admit, and to admit as members of the College, all persons now holding certificates of qualification to practise the Veterinary Art granted by the said Society upon payment by such persons of certain fees agreed upon between the said College and the said Society:

And whereas it has appeared to Us expedient that effect should be given to the terms of the said arrangement, and that the said College should be enabled to admit as members thereof all persons now holding Certificates of Qualification to practise the Veterinary Art granted by the said Society; but, inasmuch as the said Society is not a Veterinary College established for the purpose of education in Veterinary Surgery within the terms of our first hereinbefore-recited Charter or Letters Patent, the person now holding such Certificates of Qualification are not qualified to become Members of the said College; and it appears to us expedient that further powers should be granted to the said College:

Now know ye that we of our especial grace and mere motion, at the humble petition of the said College, have willed, ordained, constituted, and declared and granted, and by these presents for us, our heirs and successors, do will, ordain, constitute, and declare, and unto the said College do grant in manner following (that is to say):

1.—That it shall be lawful for the Council of the said College to admit as members of the said College, without Examination and upon such terms as to payment of fees and otherwise as the Council shall think proper, any and every person who now holds a Certificate of Qualification to practise the Veterinary Art granted by the said Society; and also any Student who, at the date of these presents, is enrolled as a Student of the said Society, or as a Student at the Teaching Schools connected with the said Society, and to whom a Certificate of Qualification to practise the Veterinary Art shall be granted by the said Society after the date of these presents.

2.—That the Council of the said College shall and may make any orders, rules, and bye-laws for the admission, as members of the said College, of persons by these presents authorised to be so admitted, and the same orders, rules, and bye-laws from time to time to alter, suspend, or repeal, and to make new orders, rules, and bye-laws in their stead, as the Council shall think most proper and expedient, so

as the same be not repugnant to these presents or to the laws of this Our realm.

3.—That at all Meetings of the said College at which votes shall be given for the election of the Council all votes of members of the said College entitled to vote shall be given by voting papers in the form defined in the bye-laws of the said College, or in a form to the like effect, such voting papers to be transmitted under cover to the Secretary of the said College not less than three clear days prior to the day on which the election is to take place.

And we do hereby further declare Our will and pleasure to be that, except in the respects hereby altered, the said College and the Council of the same shall have and continue to have all such and the same jurisdiction, powers, and authorities for the making, ordaining, confirming, annulling, or revoking orders, rules, and bye-laws, and transacting and ordaining all other matters and things whatsoever for the regulation, government, and advantage of the said College, as the said College and the Council thereof respectively had under the hereinbefore-recited Charters or Letters Patent, or in any other lawful manner.

And we do hereby, for us, Our heirs and successors, further grant unto the said College that these Our Letters Patent on the enrolment or exemplification thereof shall be in and by all things good, firm, valid, sufficient, and effectual in the law according to the true intent and meaning thereof, notwithstanding the not fully or duly reciting the said Charters or Letters Patent, or any other omission, imperfection, defect, matter, cause, or thing whatsoever, the same or any rule or law to the contrary thereof in anywise notwithstanding.

In witness whereof we have caused these Our Letters to be made Patent.

Witness Ourselves at Our Palace at Westminster, the
day of _____, in the _____ year of Our Reign.
By Her Majesty's Command.

The Council have to report that since the last Annual Meeting sixty-nine students from the respective veterinary schools have received the diploma of the Royal College of Veterinary Surgeons, and the following obtained Honorable mention, viz.:—Mr. Charles Rutherford (Edinburgh Veterinary College), with Very Great Credit; Messrs. Alfred Charles Turner, James Blakeway, Titus Littler, William Henry McCaldon, Wm. Alston Edgar, James Mills, John Davies Thomas, and Frank Smith (Royal Veterinary College); Messrs. Edward Hugh Leach, John Legge, Andrew Hume, Frederick Garside, Edmund Woods Goldsmith, and Thomas Herbert Lewis (New Veterinary College, Edinburgh); also Messrs. William Miller and John McDougall (Glasgow Veterinary College) with Great Credit.

The following gentlemen were elected Examiners for the Fellowship Degree:—Professors Williams and Duguid; Messrs. Fleming and Harpley.

A special examination for this Degree was held on July 31st, 1878, when the following were admitted Fellows:

Mr. Charles Joseph Whitworth, London.
,, Andrew Spreull, Dundee, Forfarshire.
,, Osborne Joseph Hills, Leamington.
Captain Benjamin Hill Russell, Grantham.

At this examination the Dean of the College of Preceptors was present, in order that he might be enabled to draw out some scheme by

which to test the educational attainments of the Candidates in accordance with the new Bye-laws. A scheme having been submitted to a Committee appointed by the Council, it was considered that the educational test proposed was sufficient to guarantee that the candidate possessed a good English education. In order to carry out the necessary arrangement, the Council decided to cancel "Bye-law 50" and to amend Bye-law 49, as follows:

"At least once in each year, at such time as may be appointed, the Council shall appoint a Special Court of Examiners for the purpose of examining candidates applying for the degree of Fellow. But no examination shall take place unless there are at least four candidates. This Special Court shall consist of not less than four members, of whom one shall be a member of the College of Preceptors."

Prizes.

The Fitzwygram Prizes.—Only two candidates entered their names for the competition for these prizes; both were students of the Royal Veterinary College and members of the Royal College of Veterinary Surgeons. The competition took place in London, when both competitors were unsuccessful, they having been reported as deficient in every branch of the practical examination; and as this was an important consideration with the donor, he declined to give a prize to either of the candidates, but paid their travelling expenses to and from London.

The Royal Agricultural Society's Prizes were again offered for competition. The only candidate who presented himself for examination was Mr. John Herbert Callow, of Horsham, Sussex, who obtained 1230 marks out of 1500. He was, therefore, awarded the first prize of £20 and the Gold Medal. The Examiners in their report to the Council of the Royal Agricultural Society, expressed an opinion that the qualifications required were of too stringent a character, and that the period of fifteen months after the completion of a candidate's study should be extended to two years.

It was thought that this arrangement would induce a larger number of candidates to compete for the prizes.

The Royal Agricultural Society having expressed themselves willing to give effect to the Examiner's report, the Council of the Royal College of Veterinary Surgeons approved the scheme embodied therein, and forwarded to the Secretary of the Royal Agricultural Society the following letter:

ROYAL COLLEGE OF VETERINARY SURGEONS,
10, RED LION SQUARE, W.C.;
25th March, 1879.

DEAR SIR,—The Council of the Royal College of Veterinary Surgeons have duly considered your letter relative to the prizes so liberally given by the Royal Agricultural Society for the encouragement of cattle pathology, and also the recommendation of the examiners for those prizes.

The Council acquiesce in the recommendation, and suggest that the competition should be open to all veterinary surgeons who have passed with great credit in cattle pathology (written and practical), although they may not have obtained honours in other subjects.

The Council think that such a scheme would tend to encourage the study of cattle practice among the students. This branch of veterinary science is carried on with difficulty in London, as cattle are rarely, if ever, sent for treatment to the Royal Veterinary College. The Council, however, have been glad to learn that the Royal Veterinary College have

lately made arrangements to send a class of students, under a professor, twice or three times a week to the Metropolitan Cattle Market, and also to the foreign market at Deptford.

The Council also think that the extension of time to two years after taking the diploma will act favorably in inducing young veterinary surgeons to study cattle practice after obtaining their diploma.

I am, dear Sir,

(Signed) Yours faithfully,
WM. HY. COATES,
Secretary.

H. M. Jenkins, Esq., Secretary,
Royal Agricultural Society.

This report and the letter having been laid before the Council of the Royal Agricultural Society, at a meeting held on April 2nd, the former was adopted.

The College Fund.—A subscription of £10 has been received during the past year, being a balance from the late West of England Veterinary Medical Society, forwarded by the late Treasurer, Mr. T. D. Gregory, of Bideford, Devon.

The following is the amount of Stock and Balance at the Bankers :

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|---|------------|
| Amount of Stock standing in the names of the Trustees | £1513 13 4 |
| Balance at Bankers | 43 0 6 |
| Dividends | 44 9 4 |
| West of England Veterinary Medical Society | 10 0 0 |
| Total | £1611 3 2 |

With reference to the above Fund and the application for Government aid, it has been ascertained that there are no public buildings available. It therefore only remains to apply for a Government grant, and that the Committee should again wait upon His Grace the Duke of Richmond with this object.

The following is a statement of the attendance of Members at the Council meetings held during the year 1878-9.

Vice-Presidents.

| | | | |
|---------------------------|---|-------------------|---|
| THOS. WM. GOWING . | 2 | ROBERT LEWIS HUNT | 0 |
| HENRY JOSEPH CARTWRIGHT . | 4 | JAMES MCCALL | 1 |
| SAMUEL HICKS WITHERS | 4 | GEORGE WILLIAMS | 4 |

Council.

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| Gen. Sir F. FITZWYGRAM | 7 | GEORGE FLEMING | 4 |
| JAMES COLLINS | 8 | WILLIAM PRITCHARD | 3 |
| WILLIAM H. COATES | 8 | WILLIAM WILLIAMS | 3 |
| GEORGE MORGAN | 4 | HARTLEY THOS. BATT | 7 |
| JAMES FREEMAN | 4 | THOS. GREAVES | 5 |
| ALFRED BROOKE PROCTOR | 2 | GEO. T. BROWN | 3 |
| PETER TAYLOR | 6 | E. COLEMAN DRAY | 8 |
| JOHN CUTHBERT | 5 | JAS. BEART SIMONDS | 2 |
| RICHARD SAMUEL REYNOLDS | 3 | JAS. C. BROAD | 5 |
| FRANCIS BLAKEWAY | 6 | JAMES MOON | 4 |
| BENJAMIN CARTLEDGE | 2 | JN. ROALFE COX | 3 |
| MATTHEW J. HARPLEY | 3 | GEORGE BALLS | 5 |

Presentations have been made to the Library and Museum of the College by Professors Voelcker, Brown, Mayer, and Fearnley ; also by

Mr. G. Fleming (2nd Life Guards), Mr. J. Woodrooffe Hill (Wolverhampton), Mr. Albt. Rd. Charles (London), and Mr. W. Stanford Harrison (Hertford).

A framed photograph portrait of the late Professor Gerlach, Director of the Berlin Veterinary Institute, has been presented to the College by Mr. F. S. Billings, a recent student in the above institution.

The Registrar has to report the death of 61 members of the profession since the Annual Meeting.

Two hundred and fifty copies of the new Register, Charters, and By-laws have been printed. As it will be found necessary to make several alterations and additions in the forthcoming Register, the Council propose deferring the publication until next year.

The Financial Report is annexed. The Balance in hand after defraying the expenses of the year amounts to £330 0s. 5d. In addition, the Council have the satisfaction to announce that the sum of £300 has been invested in 3 per cent. Consols.

E. C. DRAY, TREASURER, *in Account with the Council of the Royal College of Veterinary Surgeons, from APRIL 1st, 1878, to MARCH 31st, 1879.*

| Dr. | | £ | s. | d. | | | Cr. | £ | s. | d. |
|------------------------|------|----|----|-------------------------|-------------------------|----|-----|---|----|----|
| Balance at Bankers', | | | | | Examiners' Fees and Ex- | | | | | |
| April, 1878 . . . | 528 | 5 | 11 | penses . . . | 723 | 0 | 3 | | | |
| Examination Fees to | | | | Rent . . . | 100 | 0 | 0 | | | |
| March 31st, 1879 . | 1126 | 13 | 0 | Rates and Taxes . | 39 | 17 | 0 | | | |
| Fellowship do. . . | 63 | 0 | 0 | Salary to Secretary . | 150 | 0 | 0 | | | |
| Dividends . . . | 18 | 16 | 6 | Insurances . . . | 1 | 18 | 9 | | | |
| Legacy from the Estate | | | | Printing and Purchase | | | | | | |
| of the late William | | | | of Type . . . | 63 | 10 | 10 | | | |
| Field, Esq., jun. . | 104 | 6 | 8 | Advertisements . | 11 | 4 | 4 | | | |
| Copies of Register . | 11 | 2 | 0 | Stationery and Postage | | | | | | |
| Registrar's Fees . | 0 | 10 | 0 | Stamps . . . | 26 | 16 | 0 | | | |
| Property Tax . . . | 2 | 1 | 8 | Reporters . . . | 11 | 0 | 6 | | | |
| Gas consumed by C.V.M. | | | | Coals, Gas and Wood . | 23 | 9 | 6 | | | |
| Soc. | 1 | 17 | 6 | Specimen Drugs and Pre- | | | | | | |
| | | | | parations in Museum . | 3 | 9 | 11 | | | |
| | | | | Repairs and Bookbinding | 16 | 8 | 9 | | | |
| | | | | Wages . . . | 20 | 0 | 0 | | | |
| | | | | Petty House Expenses | | | | | | |
| | | | | and Messenger . . . | 35 | 11 | 6 | | | |
| | | | | Investment Purchase of | | | | | | |
| | | | | Consols . . . | 300 | 0 | 0 | | | |
| | | | | Banker's Charge and | | | | | | |
| | | | | Commission . . . | 0 | 5 | 6 | | | |
| | | | | Balance at Banker's | 330 | 0 | 5 | | | |
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Amount of Stock standing in the names of the Trustees, £952 13s. 8d.
Three per cent. consols.

We, the undersigned, have examined the above accounts, and have found them correct.

THOMAS MOORE,
JAMES BROAD, Jun., } *Auditors.*

April 28, 1879.

On the motion of *Mr. Dray*, seconded by *Mr. W. S. Wallis*, the report was received.

Mr. Dray moved, and *Mr. Gowing* seconded the adoption of the Report.

Mr. Hunting said there was one paragraph in the Report which, he thought, ought not to be adopted, namely, the paragraph in the proposed new Charter, which provided that all votes of members of the College should be given by voting papers. By this arrangement all the old methods of voting would be, he thought, entirely upset, and there would be no voting at the annual meeting. There were many reasons why the members should not be elected until the Annual General Meeting. The members would then see who had most often attended the Council meeting, and who were therefore most worthy to be their representatives on the Council, and could at the last moment vote for whom they chose on his merits.

The President explained that the clause was inserted on behalf of the interests of the London members, who, through not being able to vote by papers, were placed at a disadvantage as compared with country members who had that advantage.

Mr. Hunting said his suggestion was, that the country members should vote in the room.

The President said that already the system of voting consumed a great deal of time, and he thought that *Mr. Hunting's* suggestion would not be found practical.

Captain B. H. Russell (of Grantham) thought *Mr. Hunting's* objection might be met by sending a statement to the country members showing the number of times the various members of the Council had attended the meetings.

The President said it was quite competent for *Captain Russell* to make a motion to that effect; but it must be remembered that the statement would apply to the old members and not to the new candidates.

Captain Russell then proposed "That a statement be affixed to the voting paper sent round to the country members showing the number of times each member of the Council attended the meetings."

Mr. Rowe seconded the motion.

Mr. Fleming pointed out that the statement of attendance was not always to be relied upon, because the absence of some of the members was to be accounted for by the fact that they were doing the business of the College elsewhere. He thought if such papers were sent down to the country, as proposed by *Captain Russell*, a statement should be appended, when necessary, to the effect that the members were absent on College duties.

Mr. P. Taylor supported the clause as it stood, contending that it would give every member of the College a just and equal right of voting.

Mr. Hunting moved that an alteration be made to Clause 3 in the Supplemental Charter to the effect that "such voting papers be transmitted under cover to the Secretary of the College not less than one week after the annual general meeting has taken place."

The President said the motion could not be entertained, because the Charter expressly provided that the Council should be elected at the annual meeting.

Mr. Hunting said he would alter it to "on or before the day of the annual meeting," and the votes could be scrutinised on the following day. All other minor matters, such as the insertion of the number of attendances, could be regulated by the bye-laws.

Mr. Charles seconded *Mr. Hunting's* motion as amended.

Mr. Fleming said it had hitherto been the rule of the College at the annual meeting to name the members of the Council who were elected. If the voting papers were received on the day of the annual meeting, it would be impossible for the Secretary to have them arranged in time for the scrutineers. If members were anxious to vote he did not see why they should not send in their votes at the proper time. The Charter specified that the members of the Council were to be elected at the annual meeting, and if they were not so elected they would not be elected for the next year. He protested against the proposed alteration in the conducting of the business, because it would throw the whole of their working out of gear ; therefore, he begged to move as an amendment, "That the voting papers be not received later than a day before the annual meeting."

Mr. Taylor seconded the amendment.

The President said the Secretary had informed him that it required three days to arrange the voting papers. It was a great convenience to the members to get the election finished at the annual meeting, and there would be great practical inconvenience in putting it off for some days.

Mr. Hunting's motion was then put and lost.

Mr. Moore proposed that the report should be sent to the members some days or a week previous to the holding of the annual meeting ; it would then contain the number of attendances and the reasons for non-attendance.

Mr. Helmore seconded the proposition.

Mr. Fleming pointed out that after the report was sent out there might be some meetings held on urgent business, the report of which could not be included.

Mr. Hunting supported *Mr. Moore's* motion.

The President saw no objection to *Mr. Moore's* proposal, and said that if any meeting should take place after the report was issued a supplement might be made to the report and presented to the meeting. As regarded the number of times the members had attended the meetings there was a great deal of fallacy, because a great amount of the work of the Council was done at the Committee meetings and Sub-Committee meetings which were not registered at all. He should be happy to support *Mr. Moore's* motion, but he did not think that *Mr. Fleming's* idea of inserting the reason why members were absent could be carried practically into effect.

Capt. Russell said that if *Mr. Moore* agreed to the insertion in the annual report of the number of attendances of members of the Committees, he would withdraw his motion.

This being agreed to,

The President then put *Mr. Moore's* motion amended as follows :—
"That the annual report be circulated to the members of the profession twelve days previous to the annual meeting along with the voting papers, and that the number of attendances of the members of Council on Committees be inserted in the report."

The motion was put and carried, as was also the motion for the adoption of the annual report.

The President then submitted a motion, the effect of which was to entrust to the Council the election of scrutineers at their meeting previous to the annual meeting, thereby facilitating the dispatch of business.

Mr. Helmore seconded the motion, which was carried.

Mr. Wallis, of Halstead, called the attention of the meeting to the fol-

lowing case. He said he had educated his youngest son, who was now twenty-one years of age, with a view to his succeeding him in his business. He had been with him in practice three years previous to his matriculation, and he entered the Royal Veterinary College in October, 1877. He had been told that his son had creditably passed all his preliminaries, and both the principal and professor had expressed to him their surprise and disappointment at his rejection by the Board, and said they could only account for his failure on three occasions by his extremely nervous temperament, and his getting confused and muddled in the presence of strangers. He (Mr. Wallis) could not tell how burdened he was with sorrow at the result. He had worked hard and successfully for more than forty years, and began to feel that he wanted his son to assist him in advancing age. His plans and hopes, however, as well as those of his son, were entirely frustrated by the 37th bye-law, and his son, whose character and conduct at the College had been irreproachable, was shut out from the profession and doomed to suffer life-long disgrace, and would have to seek other employment in order to maintain himself. He (Mr. Wallis) was unwilling to think that there was a single gentleman in the room who, by supporting the rule, would drive him to adopt so sad an alternative, and he earnestly hoped to have the sympathy and help of the meeting in his trying position. In February last, Mr. Taylor, at a Council meeting, had characterised the restriction as cruel, oppressive, and unjust both to the student and his parents. Their esteemed President took a different view, and regarded the rule as useful and beneficial, and as being advantageous to the student in checking his idleness, and to the father in preventing his son wasting his time at college. He had no doubt that both gentlemen were honest and sincere in their respective views, although he could not think the terrible power and far-reaching disastrous and irreparable consequences of the rule could have been perceived by the valued and honored friend who supported it. He was quite sure that the President would not intentionally say or do anything to damage or hinder the profession at large or one of its members; and seeing the ruin the retention of this rule would bring upon him and his son, he trusted the President might be inclined to vote for its abandonment; he would therefore move, "That the council be requested to take Rule 37 into consideration with a view to its repeal."

Mr. Peter Taylor said he had great pleasure in seconding the motion. He had already given notice of a motion that the bye-law be expunged. Being the father of a large family he felt most grievously the effect of the rule on children who were nervous, or who had not the facility that experience would give them in answering questions before their examiners. He had previously brought the motion for the rejection of the rule before the College, but their honorable President thought it just and right to bring forward an amendment, and upon that amendment there were equal votes. Still, he hoped to see the day when the rule would be expunged, because he considered it iniquitous and unjust. He thought if a student paid his fees and passed his matriculation and examination he had a perfect right as a gentleman to go within the walls of any college and be educated by the professors until he had the ability to entitle him to his diploma, otherwise, a class of men would be produced who by-and-bye would get their living by empiricism. He had stated on the previous occasion that there were three large bodies, the legal, the medical, and the clerical, who had no such bye-law. If some of the students who had been thus rejected had had sufficient time they would

probably hereafter be an ornament to the profession and fulfil their position as honest men and as Englishmen.

Mr. Hunting said he was a free trader in everything, and he did not see why the rules of free trade should not be applied to education as well as to other matters. He thought, after a man had paid his fees at College and studied there, he ought to be allowed to go up as often as he liked. He thought that they had better make twenty mistakes before they did an act of injustice such as had already been done to the gentleman whose case had been mentioned to the meeting.

Mr. Gowing said he agreed with the remarks made by Mr. Hunting. Many young men, however, had resolved to go up for examination, as they said, until they tired the professors out of it. He was of opinion that the fee should be increased in order to stimulate these young men, but not such as would restrict them from presenting themselves for examination for the diploma.

Professor Williams said, as one who had objected to Bye-law 37, he was glad to see there was a movement for its repeal. He had objected to the bye-law as being unjust to the student, and as being calculated to press heavily on some deserving individual. He would give the repeal of the bye-law his heartiest support, and he thought with Mr. Taylor, that it ought not to have been inserted. It was originally framed for the purpose of getting rid of a number of young men who had been at the school for a number of years and had not worked. At that time the students of the schools paid a perpetual fee of 25 guineas, for which they had the privilege of attending at such a school for any number of years; but now the perpetual ticket had been abolished, and it was in the power of every individual school to refuse admittance to those students whom they thought were not doing their duty towards their parents. He thought the new members, whoever they were, would do well to support Mr. Taylor in the abolition of what he would call an unjust bye-law.

Mr. Greaves said he was the unfortunate seconder on two occasions of the motion for the rejection of the bye-law which had been put to the Council and lost. He also had a strong feeling that it was an injustice to many students. He quite agreed with the Professors from the London Colleges who urged that the motion should be carried on account of some students who were black sheep, and who did more harm than good among other students by leading them astray from their studies. It was, however, within the provisions of every college to act individually and expel such students. Another reason why the bye-law was made was that at one time the Royal College of Veterinary Surgeons had very little funds, and there had been several occasions when a number of rejected students came up and the examiners had to be called together at a cost of between £30 or £40, for which they did not get a return of a single penny. This was not the case now, however. He agreed with Professor Williams and Mr. Taylor that the bye-law ought to be abolished, and that a young man should be at liberty to present himself before the examiners as often as was necessary, although he would not let him pass simply because he had the idea of tiring the examiners out. A young man ought never to receive a diploma until he was deserving of it. He thought the bye-law should be rescinded in order to give an opportunity to students to become professional men instead of going into the country and being quacks all the days of their lives.

Mr. Collins said he was one of those members of Council who had opposed the motion put by Mr. Taylor, and he did it on the ground that the Governors of the Camden Town School found that thirty or forty students had been rejected as many as five or six times, at all events

many of them had been attending College for five or six years. He thought it was very objectionable that this large number of idle students should be able to attend the College so long. They obstructed the study of others, and also brought discredit on the College. Men like these, as long as they could find their parents and friends willing to furnish them with money, would continue to attend, and were very indifferent as to whether they passed their examinations or not. No doubt, to a certain extent, as Professor Williams had said, the question was one for the schools entirely, but the Council was the guardian of the profession, and regulated the course of study, the examinations, and everything connected with the students; and, therefore, he thought on that one point they were in a better position than the schools to decide as to how often students should be examined. He begged to propose that the bye-law stand as it is.

Mr. Helmore seconded the motion. In doing so he said that in all legislation there were individual cases of hardship, but they must legislate for a body, and not for an individual. If the Council had thought it best in their judgment to make such a bye-law, then it ought to be retained. With all due respect to the gentleman whose case was now before the meeting, he thought that such a quality as the want of confidence or extreme nervousness would be a great hindrance to him in his profession.

Mr. Moore said that it was not always the fault of the pupil who was rejected, but sometimes it was as much the fault of the professors or the examiners; therefore, he thought the rule was a most ridiculous one. He knew students who had been rejected in the Edinburgh School merely because they were a little nervous, or from some stupidity or spite on the part of the examiner. One examiner had got hissed out of the place, and his hat knocked over his eyes because he rejected a pupil.

The President said that if *Mr. Moore* desired *bona fide* for a Committee to inquire into the conduct of the examiners he would second the motion with pleasure, but he was not prepared to hear such statements made against the conduct or efficiency of the examiners without their being substantiated.

Mr. Fleming, as one of the first examiners who went from England to Scotland, said that he had always been treated with courtesy. He was not aware of any such occurrence having taken place as that which *Mr. Moore* had stated. Students might be a little rough and sometimes rather disposed to be rowdy, but he was not aware of their having resorted to such extremely ungentlemanly and unfair means as *Mr. Moore* had mentioned. He should like to know the time and place of the occurrence.

Professor Williams said he could safely say that such a thing had never occurred in Edinburgh.

Mr. Cowie said he had been examiner for twenty-four or twenty-five years, and he could honestly say that a fairer and more honest set of men he never met in his life as his coexaminers. The examiners made every allowance they possibly could for nervousness, and everything, in fact, except inefficiency, and he thought *Mr. Moore* must have been misinformed as to what he had stated.

Mr. Wallis's motion was then put to the meeting and carried unanimously.

The scrutineers then presented their report, which showed the following names with the number of votes for each:

| | | | |
|-------------------------|-----|-------------------------|-----|
| PROFESSOR AXE | 455 | MR. FLANIGAN | 221 |
| MR. ROBERTSON | 444 | — TALBOT | 213 |
| — GOWING | 417 | — BROAD | 210 |
| — SIMONDS | 375 | — WRAGG | 201 |
| — WHITTLE | 348 | — SANTY | 194 |
| — ANDERTON | 300 | — COX | 192 |
| — DRAY | 257 | — OWLES | 121 |
| — BALLS | 248 | — MOON | 84 |
| — CARTWRIGHT | 245 | — G. WILLIAMS | 41 |

The first six were therefore declared duly elected, viz. Professor Axe, Messrs. Robertson, Gowing, Professor Simonds, Messrs. Whittle and Anderton.

Messrs. Spooner, Avis, Broad, junr., Peacock, Dixson, and Sowerby, were the scrutineers.

On the motion of *Professor Williams*, seconded by *Mr. Gibbings*, a vote of thanks was accorded to the President, and the proceedings terminated.

CENTRAL VETERINARY MEDICAL SOCIETY.

AN ordinary meeting was held at Red Lion Square on Thursday evening, March 6th, 1879. The President, Professor Axe, in the chair, when discussion of his paper on diphtheria in relation to garget was renewed.

Mr. Fleming, adverting to Mr. Power's report, a copy of which was before him, said the attempt to trace the relationship between the human malady and the bovine was very feeble; he knew that the milk sellers in Kilburn had been severe losers by that report, and it was not unlikely legal proceedings would be taken against the author or the Pathological Society. Personally he was astonished that he should have tried to establish a relationship. Just recently Dr. Dickershoff in Germany, an excellent pathologist, had published a remarkable account of an outbreak of diphtheria in calves; how it arose was, however, not stated, it was considered infectious, an attendant man being affected with similar symptoms, he doubted if anything similar affected the cows' udder. He inquired of Mr. Banham if the Committee of the Pathological Society had made any investigation of garget; in answer thereto nothing had yet been heard of it.

The *President* said as soon as he heard of the report he put himself in connection with persons in the neighbourhood, and visited not only Muswell Hill Farm, but also the Kilburn places; he witnessed the manner of milking and the disposal of the milk; he likewise saw the veterinary surgeon, and was assured there was no garget or any specific disease prevalent for the first six months to which Mr. Power's report first dealt. The investigation seemed partial, as a list of customers had been furnished the doctor by the owner of the dairies, and this had been strictly followed up. The inquiry had not been extended to other dairies. Such a house-to-house inquiry would, no doubt, swell the number of throat affections which might not otherwise come under medical observation. It appeared from a monthly report of St. Marylebone, furnished him by Mr. Moore, that Dr. Whitmore gave a tolerably full account of the matter.

Mr. Fleming said it was the fashion to consider the principle of disorder to lie in the milk apparently for want of some better explanation, and Mr. Power finding everything else fail fell back on the milk supposition. Looking at the dimensions of the milk trade and its utility in households, he thought medical men should be very careful in that respect, owing to

the alarm occasioned. In Kilburn many now would not use milk, and much injury had been done to the dairymen. It appeared to be the opinion of the medical men that the disease was really due to the sewers which were now being opened out and repaired.

Mr. Price exhibited a portion of the liver and lungs of a horse, observing they were from a valuable cart mare, five years old, healthy up to the time of injuring a fetlock with the shoe. The injured part festered, accompanied with a deal of inflammation and sympathetic irritation; finally mortification ensuing, death took place in five days; a *post-mortem* examination revealed the state of lungs shown. He questioned whether there was any such disease before the accident; there were no lung disease symptoms shown then; the thermometer registered 105°, and there was great swelling of the limbs.

The *President* said the lesions were essentially pyæmic, and there were evidences of thrombic affection; and by the plugging of the vessels he deemed it phlebitis affecting the veins of the injured limb, and leading on to blood infection.

Mr. Fleming said, with regard to the skin affection lately under discussion, he might state that some three weeks back he received some scab crusts from a case, and immediately got a four-year old horse and, shaving a portion of skin from the side, blistered the part mildly, applied the crusts mixed with water after the chief action had passed off. Three days later there was a slight exudation, which soon went off. That morning, passing through the stable, he found an eruption on and around the parts; he should watch the animal for a few days.

The *President* said this was interesting, the Fellows would remember in an inoculated case he had detailed the affection appeared long after the experiments.

Messrs. John Gerrard, of Romford, and George A. Banham, the Brown Institution, were balloted for and duly elected, and the meeting adjourned. Present, twelve Fellows and four visitors. JAMES ROWE, *Hon. Sec.*

At another meeting held May 1st, in the absence of the President, Mr. Fleming in the chair, the President related a case of a Blenheim Spaniel that on the Thursday previous while playing with a ball of thread swallowed a needle, and some eight inches of thread. The housekeeper having accidentally dropped it, and looking for it noticed the end of the thread in the dog's mouth, but the dog bolted it while catching him. Friday and Saturday he continually vomited, and on Sunday strained violently howling as if in great pain; he was sent to him; he gave an enema, and later on drew the thread and needle (exhibited) from the anus. How it could travel the whole length of the intestine he could not understand, and was unaware of any record of a similar incident. He had several needles in his possession taken from the roof of the mouth and throat of dogs and cats.

Mr. Streather remembered a case where a boy, swallowing a puffing dart (*i. e.* a long needle with a piece of fluff in the eye), by accidentally taking a deep breath, which drew it down into the pharynx and stomach. He was ordered to lie on a sofa and eat dry crusts, which was carried out for forty-eight hours when the needle passed away with the fæces without inconvenience. This needle was some two and three quarter inches in length, Mr. Rowe's was one and a half inch.

The Chairman thought these cases curious from the fact that it was common for mad people to swallow pins and needles, which were rarely passed per rectum. In the case of a little girl he had lately heard of, who was given to swallowing needles, they passed out at all parts of her body

save the rectum, one being passed from the sole of the foot; in the above cases he thought they became attached to some hard food which assisted them in their passage. A horse in his regiment was under observation now, being supposed to have swallowed one of the iron logs with a chain attached, round-shaped, and of nearly two pounds weight. He had indicated uneasiness by putting his nose towards the chest and throwing it upwards in the air, with convulsions passing along the body; he was then thought to be colicky and treated accordingly, but the chain and log being reported as missing it was doubtless choking at the time, now two months since. Time would show the truth or fallacy of the theory.

Mr. Hancock then exhibited a horse-shoe dug up at Ilford Cemetery eighteen feet deep, which he will send to the Museum.

Mr. J. H. Steel then read a very exhaustive paper on bacteria in relation to biology, illustrated with diagrams and microscopic slides, which occupied the remainder of the evening, and the consideration of which was adjourned to the next meeting.

Mr. John Atkinson, of London, was proposed as a Fellow, and the meeting adjourned. Present, ten Fellows and two visitors.

JAMES ROWE, *Hon. Sec.*

To the Editors of the 'Veterinarian.'

YORKSHIRE VETERINARY MEDICAL SOCIETY.

THE spring quarterly meeting was held at the Queen's Hotel, Leeds, on Tuesday, the 29th of April, the President, Mr. Peter Walker, in the chair.

The following members were also present, viz.—Messrs. Naylor, Greaves, Freeman, J. Cuthbert, Anderton, J. M. Axe, Lodge, Schofield, W. G. Spillman, G. Carter, J. Atcherley, E. Scriven, Edmundson, J. S. Carter, Pratt, Beeson, Prof. Axe, and the Secretary.

Messrs. Robertson, V.S., and F. Cuthbert, student, were present as visitors.

Apologies for non-attendance were sent by Prof. Williams, Messrs. Dray, Bale, Danby, Joseph and John Freeman, Tom Taylor, W. A. Taylor, and other friends.

The minutes of the previous meeting were read and confirmed.

Professor Axe delivered a highly instructive and interesting lecture entitled "Aids to Diagnosis." He regretted exceedingly that circumstances had not permitted him to commit his thoughts to paper; but he trusted he should be sufficiently explicit verbally. The Professor confined himself almost exclusively to elucidating the physical modes of diagnosis, and passed in review the uses of the ophthalmoscope, microscope, stethoscope, thermometer, and urinometer. He regretted exceedingly that veterinary surgeons generally had not studied the various uses of these instruments, but he trusted that the remarks which fell from him that afternoon would not fail to raise a spirit of inquiry amongst the members present. The ophthalmoscope had produced marvellous results in our sister profession, and he anticipated that it would not only reveal to us, in numerous instances, the causes of "shying" in horses, but that inasmuch as it enabled us to view the inmost recesses of the eye, morbid conditions of the optic nerve and other structures were brought to our knowledge, blood blotches and old clots upon the retina were often, by its means, to be detected in the eyes of shying horses. After expatiating more fully upon the uses of the ophthalmoscope and the patent effects

ensuing therefrom, he said that he sincerely hoped his professional brethren would study the use of this valuable "aid to diagnosis." Since the compound microscope has been invented it has revolutionised the sciences of zoology, morbid anatomy, chemico-physiology, &c. The members were aware that the use of the microscope was now taught at the veterinary schools; and he might state, *en passant*, that never were there so many available means of disseminating information to the veterinary pupil as now exist at the schools. By the microscope we detect the parasite infecting the skin, reveal minute organisms in the blood, and also the bacillus of splenic fever. What should we have known as to the existence of germs unless with the aid of this wonderful instrument; besides revealing organisms existing in the blood and skin, the instrument was also useful to veterinary surgeons in determining the true nature of the morbid products existing in the urine, and thus determining whether we have disease of the bladder or kidneys.

The thermometer has received more general use than either of the other instruments on account of its simplicity; still, the amount of good derived from its use is infinitely less than from the microscope or ophthalmoscope. The thermometer merely tells you that an animal is ill, and thus acts as an auxiliary to the other symptoms; the other instruments reveal and bring the disease before your eyes.

The stethoscope is much less valuable as an aid to diagnosis in animals than in man; the presence of hair and thick skin prevent the complete transmission of vibration, but the instrument will generally inform us how far disease has progressed, &c.

The urinometer shows the state of the urine in cases of chronic defective assimilation or liver disease. Where we have defective assimilation, the specific gravity of the urine becomes altered, and therefore in these cases the use of the urinometer is beneficial.

In the discussion that followed the lecture, Messrs. Naylor, Greaves, Freeman, and other members took part.

Mr. Naylor proposed, and *Mr. Greaves* seconded a most cordial vote of thanks to Professor Axe, which was carried unanimously.

Mr. Benson exhibited a parturition hook, the handle partially composed of moveable hinge-joints; also a clamp to seize the ear of the foal or calf, both these instruments being his own invention.

WM. BROUGHTON, *Hon. Sec.*

NEW VETERINARY COLLEGE.

ON Wednesday, the 16th, the presentation of prizes, at the close of the session of this College, took place in the large hall of the Institution. Major-General Sir Frederick Fitzwygram, Bart., occupied the chair; and amongst others present were—Principal Williams, Professor Vaughan, Professor Kitchin, Dr. Young, Dr. Stevenson McAdam, Professor McAlpine, Mr. Robinson, V.S., Greenock; Mr. Rutherford, V.S., Edinburgh; Mr. Aitkin, V.S., Edinburgh; Mr. Balfour, V.S., Kirkcaldy; Mr. Finlay, V.S., Jock's Lodge; Mr. Mills, V.S., R.H.A.; Mr. Kirk, V.S., Edinburgh; Mr. Murray, V.S., Edinburgh; Dr. Mackay, Edinburgh; Mr. McGregor, and others.

Before proceeding to read the list of prize winners, *Principal Williams* said he was glad to be able to state that the College had succeeded in the past year beyond his utmost expectations. No less than 91 students had attended the classes during the past winter session. In fact the success

of the College had been so great as to warrant him in carrying out a project which he had thought of for a great many years as one likely to be very beneficial to veterinary science. In his opinion, veterinary surgeons, above all men, should have a knowledge of Natural History, and his success had been such, as he had just now stated, as to warrant him in establishing a Natural History chair (applause). He had been fortunate in securing for the chair a gentleman well qualified to fill it. The class would be divided into two—botany being taught during the summer, and zoology during the winter course. He felt sure that this would enhance veterinary education to a very material extent, and he had no doubt the friends of veterinary science would assist him in carrying out what he believed to be a very valuable idea (applause). The distribution of prizes was thereafter proceeded with.

LIST OF PRIZES.

Medals given by the "Highland and Agricultural Society of Scotland."

ANATOMY.

Medal.—Mr. James J. Fraser.

Certificate of Merit.—Mr. Thomas Caldecott.

PHYSIOLOGY.

Medal.—Mr. James Ingram.

Certificate of Merit.—Mr. W. O. Williams.

„ Mr. J. J. Fraser.

„ Mr. G. Sandeman.

PATHOLOGY OF THE HORSE.

Medal.—Mr. John Carr.

Certificate of Merit.—Mr. Edward Leach.

„ Mr. T. H. Lewis.

„ Mr. Kay Lewis.

CATTLE PATHOLOGY.

Medal.—Mr. Edward Leach.

Certificate of Merit.—Mr. John Carr.

„ Mr. T. H. Lewis.

CHEMISTRY.

Medal.—Mr. W. Woods.

Certificate of Merit.—Mr. Graham.

„ Mr. Greenhalgh.

BOTANY.

Medal.—Mr. A. W. Michaelis.

Certificate of Merit.—Mr. Harry Hunt.

MATERIA MEDICA.

Medal.—Mr. Canty.

Certificate of Merit.—Mr. T. Caldecott.

Two prizes given by Mr. Thompson, V.S., Aspatria, to the two students who pass the best Test Examination for the first Professional, awarded to—

Mr. Greenhalgh and Mr. Cottam.

Prize of £20 awarded to the student who passes the second Professional Examination—

Mr. Leach } Equal. £10 each.
Mr. Lewis }

Prize given by a few Graduates of the College for "practical work."

Microscope awarded to Mr. Lewis for the best case of microscopical specimens prepared by himself.

Medal given by the "Edinburgh Veterinary Medical Society" for the best Essay on "Equine Conformation"—

Medal.—Mr. Wilson.

Certificate of Merit.—Mr. Dickinson.

Medal given by a lady for the best Essay on "Pleuro-pneumonia"—

Medal.—Mr. Lewis.

The *Chairman* then addressed the students, giving them some practical advice as to their future course in life. He said they could not all expect to obtain the blue ribbon in the veterinary profession as has friend Professor Williams had done (applause); but still, by honest industry and zeal each could work out for himself an honorable and useful career.

At the close a cordial vote of thanks was awarded to the chairman on the motion of Mr. MacGregor, L.S.C.

ONTARIO VETERINARY MEDICAL ASSOCIATION.

A SPECIAL meeting of the Ontario Veterinary Medical Association was held in the Veterinary College, Toronto, on Thursday, April 3rd. The meeting was well attended by members from all parts of the province.

Prof. Smith, President of the Association, opened the meeting, and read the Act of Incorporation of the Association just passed in the Provincial Legislature, on which an animated discussion ensued. The Act, although not all that was wished, appeared to give pretty general satisfaction. The clause in it requiring all qualified veterinary surgeons to register was especially commended. There is also a clause making it a penal offence for any person to assume the title of veterinary surgeon unless he is a graduate of some recognised veterinary college, and the recognised colleges (both of Europe and America) are specified. The secretary of the Association, Mr. Sweetapple, veterinary surgeon, of Brooklyn, was appointed registrar.

It was also moved by *Mr. Duncan*, seconded by *Mr. Caesar*, and carried, "That the Ontario Veterinary Medical Association, in view of the vast stock interests both of the United States and Canada, and the great danger to those interests in both countries of allowing contagious disease to advance without proper measures being taken to check such disease, urge upon the Governments respectively of the United States and Canada to appoint a joint Veterinary Commission to examine into and report upon the steps necessary to be taken to prevent the spread of contagious diseases."

Mr. Coleman, V.S., of Ottawa, read a very interesting paper on diagnosis. He dwelt strongly on the great advantage to the profession at the present day in the improved instruments now in use for the study of diseases. He also spoke very highly of that able work, Da Costa's 'Medical Diagnosis,' and strongly advised those practitioners who had not seen it to add it to their library, and closed his remarks by quoting the pithy Americanism, "Be sure you are right, then go ahead."

After some further routine business the meeting adjourned to the next annual meeting.

ONTARIO VETERINARY COLLEGE.

THE Spring Examination of this Institution took place on Wednesday and Thursday, April 2nd and 3rd.

The following gentlemen constituted the Board of Examiners:—Mr. Cowan, Galt; Mr. Coleman, Ottawa; Mr. Cæsar, Port Hope; Mr. Duncan, Goderich; Chas. McNaught, Seaforth; Mr. Wilson, London, and Dr. Thorburn. The Board were assisted by several other gentlemen, graduates of the College, who were present as visitors.

The annual distribution of prizes and diplomas to the successful students at the examinations of the Ontario Veterinary College took place yesterday (Thursday) morning. Among those present were his Honour the Lieut.-Governor, Hon. Mr. Wood, Hon. Mr. Crooks, Hon. Mr. Hardy, Professor Buckland, Dr. Andrew Smith, the Principal, Dr. Thorburn, and Captain Grant, A. D. C.

GRADUATES.

Messrs. James Frink, St. John's, New Brunswick; E. Prentice, Chicago, Illinois, U.S.; F. C. Grenside Guelph; C. S. Green, Richmond, Illinois, U.S.; N. Grant, Thornyhurst; W. McCormack, London; J. Armstrong, Bayfield; E. W. Bartram, Ovid, Mich., U.S.; S. J. Foelker, Allentown, Penn., U.S.; J. Heckenberger, Catasaugna, Penn., U.S.; J. Johnston, Teeswater; M. McNally, Houston, Texas, U.S.; O. B. French, East Bloomfield, N.Y., U.S.; D. H. Ackerill, Belleville; G. J. Howell, Goderich; James Massie, Smith's Falls; J. E. Gemmel, Toronto; F. McDonagh, Goderich; K. H. Cleaver, Allentown, Penn., U.S.; H. Butcher, Omagh; W. Powers, Port Hope; D. Bateman, Port Perry, S. M. Foster, Belleville; T. Fisher, Georgetown; E. Blackwell, London; S. Ottwell, Goodwood; R. White, Whitby; J. H. Miller, Seville, Ohio, U.S.; G. W. Coppis, Madisonburgh, Ohio, U.S.; E. C. Oliver, Claude; W. Rose, Durham; John Cooper Milnes, Cedar Rapids, Iowa, U.S.; G. F. Lount, Toronto; G. A. Dallimore, York; J. Stephens, Collingwood; C. Matthews, Brougham; F. W. Matthews, Toronto; J. G. Rutherford, Toronto; W. J. Byers, Nobletown; F. J. Hammil, Keenansville; P. Z. Colzson, Mobile, Alabama, U.S.; T. Brenton, U. Springer, Waterloo; C. Smith, St. Mary's; W. Burt, Lynn Valley; J. B. Fretz, Penn., U.S.; L. C. Spidell, Ohio, U.S.; P. W. Stevenson, Aurora; B. B. Page, Ill., U.S.; J. Loughman, Montreal; A. G. Douglas, Geo. W. Bell, J. P. Whitehead, Delaware; J. Mack, N.Y., U.S.; J. Taylor, St. Catherine's; Geo. Dunphy, Salford; W. B. Austin, Limcoe; L. A. Severcool, Ohio, U.S.; A. Bell, T. Meredith, N.Y., U.S.; G. Coulter, Islington; J. Burnett, London; H. E. Hawley, R. Riddell, T. Groff, Ohio, U.S.; G. W. Garrison, Ohio, U.S.; D. McFadden.

PRIMARY EXAMINATION.

G. F. Lount, Toronto, Ont.; W. J. McCormack, London, Ont.; W. Powers, Port Hope, Ont.

GENERAL EXAMINATIONS.

Gold medal given by the Ontario Medical Veterinary Association to the student passing the best general examination, J. G. Rutherford.

Honours—1st Class, E. Prentice, S. Foelker, F. Grenside; 2nd Class, J. Frink, T. Foster, O. French, M. McNally, E. C. Oliver.

ANATOMY.

Silver Medal, Foelker.

Honours—Grenside, Gemmel, Prentice, Rutherford.

ENTOZOA.

Prize, Prentice. *Honours*, Foelker, Gemmel.

CHEMISTRY.

Seniors—First (*æq.*), Gemmel, J. H. Milnes.

Honours—Grenside, W. Rose, Prentice.

HORSE PATHOLOGY.

Seniors—Silver Medal, Prentice.

Honours—Foelker, French, Grenside, Rutherford.

CATTLE PATHOLOGY.

Seniors—Prize, Grenside.

Honours—Cleaver, French, Foelker, Gemmel, Prentice, Rutherford

MATERIA MEDICA.

Seniors—Prize, Cleaver.

Honours—Gemmel, Oliver, Massie.

BREEDING AND MANAGEMENT OF FARM ANIMALS.

J. G. Rutherford, \$20 in books given, by the Commissioner of Agriculture.

F. C. Grenside, 2nd prize, \$15 in books, given by the Agricultural and Arts Association.

J. E. Gemmel, 3rd prize, \$10 in books, given by the Association.

JUNIORS.

Anatomy—Silver Medal, C. Smith. Prize, U. Springer.

Honours—Brerton, Burt, Coulson, Loughman, Whiteside.

Chemistry—*Honours*—Dunphy and Smith (equal), Brenton.

Pathology—*Honours*—Springer and Smith (equal).

MONTREAL VETERINARY COLLEGE.

THE Examinations of the Students of the College, which had been in progress during Monday, Tuesday, and Wednesday, were concluded on Thursday, March 27th, by a public examination, in the presence of a large number of professors and friends, conducted by the following Board of Examiners, appointed by the Council of Agriculture.

The following is the result of the examinations :

The first-year students were examined in Botany by Professor J. W. Dawson, LL.D., and the following passed successfully :

E. J. Carter, Montreal ; T. L. Martin, Dorset, Vermont, U.S. ; B. D. Pierce, Springfield, Mass. ; Chas. Ormond, Milwaukee, Wisconsin ; J. B. Green, Yellow Springs, Ohio ; R. Price, Montreal ; N. P. Hinkley, Buffalo. French Department—E. H. Brosseau, M.D., Professor, Victoria College, Examiner. Hilaire Bisailon, St. Valentine, P.Q. ; Honore Bergeron, St. Martin, P.Q. ; Albert Trudel, St. Genevieve de Batiscan, P.Q.

Chemistry—Professor Craik, McGill University, Examiner. M. S. Brown, Montreal ; Wm. Jakeman, Chelsea, Mass, U.S. ; Alex. W. Harris, Ottawa, Ont. ; E. White, Montreal ; W. McEachran, Montreal ; P. Cummins, Quebec. French Department—Prof. D'Orsonnens, Victoria College, Examiner. Joseph Page, Lotbiniere, P.Q.

Physiology—Prof. W. Osler, McGill University, Examiner. M. S. Brown, Montreal; Wm. Jakeman, Chelsea, Mass, U.S.; Alex. W. Harris, Ottawa, Ont.; Wm. McEachran, Montreal; P. Cummins, Quebec, French Department—Geo. O. Beaudry, Prof., Victoria College, Examiner. Joseph Page, Lotbiniere, P.Q.

The following students, who had fulfilled the full *curriculum* and passed satisfactorily written examinations, were examined by the whole Board, orally, and having given satisfactory evidence of their proficiency were admitted as members of the profession, viz.—Isaac J. Miles, Charles ton, Illinois, U.S.; W. L. Williams, Argenta, Illinois; Floret S. Thomas, M.D., Hanson, Mass., U.S.; H. D. McMartin, Montreal; Charles Winslow, Rockland, Mass., U.S.; D. Lemay, Bord a Plouff, P.Q.; M. C. Baker, Dunham, P.Q. French Department—Victor Theodule Daubigny, Lachenaie, P.Q.; Henri Audrain, Montreal; Alphonse Levesque, Montreal; Hector Bergevin, St. Timothe, P.Q.

Veterinary Jurisprudence.

THE RECENT DEATHS OF CHILDREN FROM GLANDERS.

HAMMERSMITH POLICE COURT, *April 28th.*

John Bacon, a cab proprietor, having stables in Colville Mews, Notting Hill, was summoned for an infringement of the Contagious Diseases (Animals) Act, and an Order of her Majesty's Privy Council, known as the "Animals Order of 1878."

Mr. Francis appeared for the defendant, who pleaded guilty.

Mr. Napier, from the solicitor's department of the Metropolitan Board of Works, said there were two summonses, one for not giving notice to the police of a glandered horse in his possession, and the second for not giving notice of another suffering from "farcy." Five horses were killed, but only two cases had been selected. It was a melancholy fact that the deaths of two persons might have been prevented if proper precautions had been taken and notice given to the police, the disease might have been stamped out, but the proper precautions were disregarded, and the result was the deaths of the persons he had mentioned.

Mr. Francis said that he had looked into the case and found that he could not resist a conviction. The defendant had unfortunately been suffering from an attack of paralysis, and had not exercised the reasonable diligence which the Act of Parliament required; but it was his intention to give up the trade. He left the case in the hands of the magistrate.

Mr. Paget, in giving his decision, said it was a very serious case. He fined the defendant the full penalty of £20 on each summons, with one guinea costs, and, in default of distress, ordered him to be imprisoned for two months.

Mr. Francis appealed to the magistrate to mitigate the fines, which would ruin his client.

Mr. Paget said he could not accede to the application, as the consequences of neglect of that kind were so terrible.

PARLIAMENTARY INTELLIGENCE.

AMERICAN PIGS.

HOUSE OF COMMONS, *May 8th.*

Mr. King-Harman asked the Vice-President of the Council whether he was aware that the parasite known as *Trichina spiralis* was reported to be extremely prevalent among the American pigs, large numbers of which were now being imported into this country; whether he had heard that in a recent consignment delivered at Wolverhampton, 16 out of the 300 pigs were found to be dead in the trucks, while 4 more dropped dead immediately afterwards, and that the whole of these 20 were found to be full of trichinæ; and whether he would take measures to prevent the horrible malady of trichinosis being disseminated by the free importation of such diseased animals.

Lord G. Hamilton—The Government have not received any information of swine affected with trichinosis having been landed in this country from the United States, but a cargo of swine, among which the disease known as typhoid fever existed, was landed at Hull on April 25th, and were permitted by the inspector of the Privy Council to be removed from the landing-place. Some of the swine were seized by the sanitary authorities at Hull, and a large number were sent on to Birmingham, the authorities of which town had been informed by the Hull local authority of the destination of the animals. The inspector at Birmingham reports that all the swine have been slaughtered. The inspector who examined the animals on landing has been dismissed. Owing to the prevalence of typhoid fever among swine in the United States, and the number of diseased cargoes arriving here, by an Order in Council American swine must be slaughtered at the port of debarkation. (Hear, hear.)

TRANSPORT OF CATTLE.

HOUSE OF LORDS, *April 28th.*

Earl Delawarr, in calling attention to the report of the Veterinary Department of the Privy Council of the past year specially with reference to the transport of cattle, and in moving for a copy of the orders issued by the Privy Council on the subject, observed that the question was one of great importance, and had been more than once before their lordships. He was quite aware that the Council had issued several orders on the subject of the transport of cattle, but it did not appear that their orders had been attended with the desired effect. There were last year sent over from Ireland alone no less than 115,771 head of cattle, and the inspector reported that the proper arrangements for the inspection of cattle were very deficient. Captain Tennant, the Government inspector of the Westmoreland district, reported that at very few ports indeed was there any proper landing stage or lairs for the cattle, it being generally understood that they would be sent on by the first trains and when they were not the greatest inconvenience arose, and the cattle were much depreciated by overcrowding. He pointed out that there were landed from Canada last year 59,975 head and from the United States 128,471, making a total of 188,447, of which no less than 10,667 had to be thrown overboard, 540 were landed in a diseased condition

from overcrowding, and 718 so much exhausted and injured that they had to be slaughtered on arriving at the port of debarkation. He thought that under such circumstances the orders issued by the Government were either very lax, or at all events very ineffectively carried out.

The *Duke of Richmond and Gordon*, in reply, reminded the noble earl that the report of Captain Tennant referred to the year 1877, which was previous to the new departure taken last year, and he thought it would be found that since that time there had been a marked improvement. Not only was the report inquired into by the Privy Council, but by the Irish Government. The noble earl thought that there should be a definition of the number of cubic feet to be set aside for each animal, but that implied that all animals would be of one size, and it was impossible to provide the exact space required by cattle, some of which might be Derry cows and others short-horned bulls. With regard to cattle coming from the United States and Canada he certainly was struck with astonishment, and had called the attention of the shipowners to it, he having intended to institute a prosecution in one particular instance, but the answer was conclusive, that when the ship started everything was in good order, and there was abundant ventilation, but unfortunately the extremely bad weather which it encountered upset all the arrangements, and he pointed out that however good the arrangements might be at starting, if the ship encountered bad weather they could not be maintained, and that accounted for the great mortality that had occurred. In regard to the motion, he stated that all the orders of the Privy Council referred to were already published in the papers laid before Parliament, and which the noble lord held in his hand, and in regard to the general action of the Government he would only say that he had instituted no less than fourteen prosecutions, in all of which he had been successful.

Earl Delawarr then withdrew the motion.

THE VIVISECTION ACT.

HOUSE OF COMMONS, *Thursday, May 1st.*

Mr. Anderson asked under what authority certain holders of licences for the practice of vivisection in the University of Cambridge, Glasgow Royal Infirmary, and Queen's University of Belfast had their names concealed in the return lately presented to Parliament.

Mr. Cross replied that he should object very much to individual names being published without the consent of the owners, as the latter might be subject to annoyance and loss of practice; but when the inspector was making his report for this year, he (*Mr. Cross*) told him to ask whether the various gentlemen who practised vivisection objected to having their names published. He was glad to say that the vast majority had consented to the appearance of their names, and he hoped that in another year their example would be followed by the remainder. (Hear, hear.)

THE NESTORIAN'S CARGO.

Friday, May 9th.

Lord G. Hamilton, in reply to a question by *Dr. Cameron*, said he would state exactly what did occur in reference to this case. Under the Contagious Diseases Acts of last session all cattle or sheep from foreign ports to this country must be landed at a port where there is a foreign animals' wharf. The Nestorian arrived with 500 sheep at Southampton, where there was no such wharf. She then went over to

Havre and returned to Plymouth. The only foreign animals' wharf there was in the victualling-yard, and as the yard was full the Admiralty were unable to accede to the request of the owners to have the sheep landed there. They then asked to be allowed to slaughter the animals on board, which was done under the superintendence of the inspector of the wharf. He might add that if the local authorities of any port considered that the trade was sufficient to justify their incurring the expense of establishing a foreign animals' wharf, the Privy Council would be ready to consider the proposal.

PLEURO-PNEUMONIA.

In answer to *Mr. Mundella*, who asked whether the Vice-President of the Council was aware that Professor W. W. Williams, of the Edinburgh Veterinary College, had written a letter denying that pleuro-pneumonia had existed in any cattle hitherto imported from the United States, and characterising "as a gross mistake" the statement of the authorities that certain of such cattle had been found to be suffering from pleuro-pneumonia,

Lord G. Hamilton said—The statements made by Professor Williams were brought under the notice of the Government by the Canadian Government, and the following memorandum by Professor Brown, the professional officer of the Privy Council, was transmitted to them in reply:

"On January 26th the Steamship Ontario arrived at Liverpool, having on board 195 cattle and two carcasses; 87 head of cattle had been thrown overboard, making the total number shipped 284. On examining one of the carcasses, the inspector at Liverpool found evidence of pleuro-pneumonia, and forwarded portions of the lung to the Veterinary Department. This specimen was found to represent the characteristic indications of the contagious pleuro-pneumonia of cattle so well known in this country. By direction of the Lord President I immediately instructed Mr. Duguid, one of the inspectors of this department, to proceed to Liverpool and report as to the condition of the animals which had been detained there. Mr. Duguid remained at Liverpool and superintended the slaughter of the cattle, and in the course of the *post-mortem* examination he detected thirteen instances of pleuro-pneumonia in various stages. Since the landing of the cattle from the Ontario in January, cases of the disease have been detected among cattle from the United States by the inspector at Liverpool in three other cargoes, and in one cargo by the inspector at the Foreign Cattle Market, Deptford. Portions of the lungs taken from the diseased cattle were forwarded by the inspectors to the Veterinary Department, and I took the opportunity of submitting some of the specimens to the inspection of several experts who have made pleuro-pneumonia of cattle a subject of special inquiry, and they were unanimous in their expression of opinion that the morbid changes were indicative of contagious pleuro-pneumonia. I may add that the alterations which are apparent in the lung structure in contagious pleuro-pneumonia, even in the earliest stages, are so different from those which occur in any other affection of the lungs of the ox, that no competent pathologist would experience any difficulty in arriving at a correct conclusion as to the nature of the disease."

Since the date of this memorandum six cargoes have been landed from America in Liverpool and at Deptford, in which contagious pleuro-pneumonia has been found to exist. (Hear.)

Alluding to the Parliamentary report respecting imported American cattle being the subjects of pleuro-pneumonia, the *North British Agriculturist* remarks that "Professor Williams, of the New Veterinary College, Edinburgh, has gained questionable notoriety by affirming in certain letters that no pleuro-pneumonia had been brought to Liverpool from America, and that 'everybody is surprised that such a gross mistake should have been made as to suppose the contrary. But doctors have differed before to-day; and the Privy Council, in so important a matter, may be pardoned for trusting to the guidance of (as Lord George Hamilton puts it) 'experts who have made pleuro-pneumonia of cattle a subject of special inquiry,' and who have no hesitation in saying that the appearances presented were such 'that no competent pathologist would experience any difficulty in arriving at a correct conclusion as to the nature of the disease.'"

THE ANNUAL DINNER.

WE regret that the crowded state of our pages will only admit of the mere announcement of the Annual Dinner having been held at the Freemasons' Tavern, on the evening of the General Meeting. The number of visitors and members of the profession who were present exceeded that of many former years; and we rejoiced to see Members of Parliament, gallant Officers of the Army, distinguished Agriculturists, official representatives of the Government, private Gentlemen, Professors, Army veterinary surgeons, Fellows, town and provincial Members of the profession, rallying around the gallant General, Sir F. Fitzwygram, Bart., who occupied the chair. More than usual eloquence flowed from the several speakers, and all bore evidence to the bright prospects which were dawning on the future of the profession.

PRESENTATION OF A TESTIMONIAL TO GEORGE FLEMING, Esq., at the Annual Dinner of the Profession, 1879, by Mr. THOMAS GREAVES, Manchester.

MR. CHAIRMAN, FELLOWS, AND MEMBERS OF MY PROFESSION,—I rise to perform the very pleasing duty of presenting a testimonial to a worthy and honoured member of our profession. I feel it to be a distinguished honour to be permitted to do this, and to convey with this testimonial the verbal expression of a grateful profession. Being the representative and exponent of the wishes and feelings of my veterinary brethren, I find some difficulty in expressing in appropriate language their views and sentiments towards the person whom it is their delight to honour. The labours of Mr. George Fleming in the field of veterinary literature are beyond our praise. Mr. Fleming is a man who has essentially risen from the ranks by his own indomitable industry, provident habits, and ability. He has risen to the rank of one of the first scientific veterinary surgeons of the day; we are all proud of him; he is a star in the profession to which he belongs. You will see this is no flattery when I tell you he has educated himself to speak and write six or seven languages. He is

the author of several classical works which are standard works, not only for veterinarians but also for medical men all over the world. We may especially name his works on *Obstetrics*, on *Medical Sanitary Science and Police*, on *Rabies and Hydrophobia*, on *Horse Shoes and Horse Shoeing*, on *Animal Plagues*—this alone necessitated reading and translating eight or nine languages—also his *Travels on Horseback in Mantchu Tartary*, and his translation from the French of *Chauveau's Comparative Anatomy*, one of the best and most complete of all the foreign text-books, and various useful articles too numerous to mention. We feel it is our bounden duty to return him some recognition for services rendered. I feel constrained to admit, although this testimonial emanates from Great Britain, Australia, Canada, America, and India, it but feebly expresses the estimation in which Mr. Fleming is held by the members of the Royal College of Veterinary Surgeons. We find in him a man who has long laboured assiduously, honestly, and earnestly in our profession; his mind has risen to a large and just conception of life, and understands in its true sense that life is more than meat. His works will live after him; he has proved himself a man gifted with talents of no mean order, and these he has exercised for our good in the advancement of our common profession. He seems to have thrown his whole soul and his life into the struggle; and the poet says—

“ Life is real, life is earnest,
And the grave is not its goal;
Dust thou art, to dust returnest,
Was not spoken of the soul.”

We are taught that the emancipated soul will rise to a higher, brighter, and better world. With remembrances of kindness rendered here, to most of us this life is a chequered scene; even the material elements of this testimonial may, nay must perish, but the ethereal elements of the friendship which called it forth are capable of everlasting duration; and the expressions of kindness with which its presentation is being accompanied will, we hope, afford solace in life's latest hour, and possibly freshen in eternity. His active mind and enterprising disposition have rendered him useful in many ways, greatly increasing our obligations to him. He possesses every attribute of a humane English gentleman. The strong characteristic of Mr. Fleming's nature seems to be intense earnestness, blended with intense gentleness and kindness towards all animal creation. We are told—“The man is dead alike to feeling, and unfit for human fellowship, who can witness animals placed lower in creation than himself, enjoying life, and their happiness does not augment his own.” His uncompromising antagonism to vivisection and cruelty to animals in every form proves the noble qualities of his mind, and shows that he

“ Casts round the world an equal eye,
And feels for all that live.”

As an Examiner in our Court of Examiners, Mr. Fleming has earned for himself the high esteem of the Council and the Students. As the author and publisher of that popular monthly journal the *Veterinary Journal*, diffusing so much useful and scientific matter, by this almost Herculean task he has endeared himself to his profession.

In conclusion, I beg to hand you, Sir, this beautiful timepiece with its inscription, and this purse of gold—a purse containing three hundred sovereigns, out of the bounty of 284 members of my profession. We most sincerely wish you many years of health and life to continue your noble labour; and whenever, in the ordinary course of nature, your useful and

valuable life draws to a close, when the silver cord is loosened, when everything lovely that has been near and dear to you in this beautiful world fades from your vision, and the grim messenger approaches his prey, even then, in that dread hour, you will not be forgotten nor forsaken by your veterinary brethren, for their prayer will then be that your last end will be peace.

Mr. Fleming replied in a very feeling and appropriate speech, thanking the members of his profession most earnestly for their expressions of kindness towards him, and for the gift. He especially begged to thank the officers who had undertaken the arduous duty of supervision of the testimonial—he alluded to the chairman, General Sir Frederick Fitzwygram; the treasurer, Mr. Ward; and the secretary, Mr. J. Rowe, all of whom he thanked for their attention and the great trouble they had taken in the matter.

THE FLEMING TESTIMONIAL.

SIR,—In concluding my trust for the above, I beg to submit a full list of subscribers thereto, and of the attendant expenses; and beg you will accord me space in your journal for the same.

Remaining, yours faithfully,

JAMES ROWE (Jun.), *Hon. Sec.*

65, High Street, Marylebone.

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|-------------------|---|----|----|--------------------|---|----|----|
| Anderton, J. W. | 0 | 10 | 6 | Bryer, — | 1 | 1 | 0 |
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| Auger, T. E. | 0 | 10 | 6 | Carless, G. | 1 | 1 | 0 |
| Aulton, A. | 1 | 1 | 0 | Catt, A. E. | 1 | 1 | 0 |
| Axe, J. M. | 1 | 1 | 0 | Carter, J. | 0 | 10 | 6 |
| Axe, Prof. | 1 | 1 | 0 | Cartledge, B. | 1 | 1 | 0 |
| Baird, A. | 1 | 1 | 0 | Cartwright and Son | 2 | 2 | 0 |
| Baird, C. | 1 | 1 | 0 | Cartwright, H. J. | 1 | 1 | 0 |
| Bale, J. | 0 | 10 | 6 | Cartwright, R. | 1 | 1 | 0 |
| Balls and Son | 2 | 2 | 0 | Cave, G. | 1 | 1 | 0 |
| Banham, G. A. | 0 | 10 | 0 | Cave, T. | 0 | 10 | 6 |
| Barber, J. S. | 1 | 1 | 0 | Challinor, A. | 1 | 1 | 0 |
| Barford, J. D. | 0 | 10 | 0 | Challinor, C. | 1 | 1 | 0 |
| Barron, N. | 0 | 10 | 6 | Chesterman, T. | 1 | 1 | 0 |
| Batt and Son | 3 | 3 | 0 | Clark, W. | 1 | 1 | 0 |
| Beard, H. | 0 | 10 | 6 | Clarke, J. A. | 1 | 1 | 0 |
| Beddard, E. | 1 | 1 | 0 | Coates, W. H. | 1 | 1 | 0 |
| Bell, J. | 1 | 1 | 0 | Coleman, J. B. | 0 | 10 | 0 |
| Bentley, W. | 1 | 1 | 0 | Collins, J. | 2 | 2 | 0 |
| Blakeway, F. | 1 | 1 | 0 | Cooper, S. J. | 0 | 10 | 6 |
| Bowles, — | 1 | 1 | 0 | Cowie, J. | 2 | 0 | 0 |
| Boyd, — | 4 | 0 | 0 | Cox, J. Roalfe | 5 | 5 | 0 |
| Bradshaw, H. | 0 | 10 | 6 | Cuthbert, J. | 1 | 1 | 0 |
| Briggs, F. | 1 | 1 | 0 | Dacre, W. | 1 | 1 | 0 |
| Broad, A. | 1 | 1 | 0 | Daniell, A. B. | 1 | 1 | 0 |
| Broad, J. C. | 1 | 1 | 0 | Darwell and Son | 1 | 1 | 0 |
| Broad, T. D. | 1 | 1 | 0 | Davy, E. M. | 1 | 1 | 0 |
| Bromley, W. | 1 | 1 | 0 | Dewar, J. R. | 1 | 1 | 0 |
| Broughton, W. | 0 | 10 | 6 | Dickie, — | 1 | 0 | 0 |
| Brown, Prof. | 1 | 1 | 0 | Dobie, W. | 1 | 1 | 0 |
| Boyer, — | 1 | 1 | 0 | Duguid, Prof. | 1 | 1 | 0 |
| Burrell, J., jun. | 1 | 1 | 0 | Dunlop, J. B. | 1 | 1 | 0 |

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| Elam, C. W. | 1 | 1 | 0 | Lawson, J. | 1 | 1 | 0 |
| Evans, G. M. D. | 1 | 1 | 0 | Lawson, W. C. | 1 | 1 | 0 |
| Faulkner, E. | 3 | 3 | 0 | Leather and Sons | 3 | 3 | 0 |
| Faulkner, J. S. | 1 | 1 | 0 | Lewis, — | 0 | 5 | 0 |
| Fergusson, H. | 1 | 1 | 0 | Lepper, G. A. | 1 | 1 | 0 |
| Ferris, — | 0 | 10 | 6 | Locke, S. | 1 | 1 | 0 |
| Feld, W. | 1 | 1 | 0 | Longhurst, — | 1 | 1 | 0 |
| Findlay, J. | 1 | 1 | 0 | Longhurst, S. | 1 | 1 | 0 |
| Fitzwygram, Sir F. | 1 | 1 | 0 | Longhurst, W. | 0 | 10 | 6 |
| Fraser, J. | 1 | 0 | 0 | Low, F. | 1 | 1 | 0 |
| Freeman, Jas. | 1 | 1 | 0 | Lupton, J. I. | 2 | 2 | 0 |
| Freeman, John | 0 | 10 | 6 | MacCallum | 1 | 1 | 0 |
| Freeman, Joseph | 0 | 10 | 6 | MacGillivray | 1 | 1 | 0 |
| Frost, R. F. | 2 | 2 | 0 | Markham, J. | 1 | 1 | 0 |
| Gardiner, B. | 1 | 1 | 0 | Marshall, F. J. | 1 | 1 | 0 |
| Gerrard, J. | 1 | 1 | 0 | Martin, J. B. | 2 | 2 | 0 |
| Gibbings, H. D. | 0 | 10 | 6 | Masters, W. | 1 | 0 | 0 |
| Gibbs, J. | 0 | 12 | 0 | Matthews, I. | 1 | 1 | 0 |
| Gibton, R. | 0 | 10 | 0 | Mayer, Prof. | 1 | 1 | 0 |
| Gloag, J. | 1 | 1 | 0 | McCall, Prof. | 5 | 0 | 0 |
| Goule, H. | 0 | 10 | 6 | McEachran, Prof. | 5 | 0 | 0 |
| Gowing and Son | 2 | 2 | 0 | McFadyean, Prof. | 1 | 1 | 0 |
| Gray, G. | 1 | 1 | 0 | McGavin, J. | 0 | 10 | 0 |
| Greaves, T. | 12 | 12 | 0 | McGill, Prof. | 1 | 1 | 0 |
| Gresswell, C. | 1 | 1 | 0 | Mence, M. | 1 | 1 | 0 |
| Groves, C. | 0 | 5 | 0 | Menzies, D. | 0 | 10 | 6 |
| Gudgin, T. | 1 | 1 | 0 | Menzies, J. S. | 0 | 10 | 6 |
| Gunn, A. | 1 | 1 | 0 | Merrick, J. | 1 | 1 | 0 |
| Gunn, — | 0 | 10 | 6 | Meyrick, T. | 1 | 1 | 0 |
| Hammond, — | 0 | 11 | 6 | Mitchell, A. | 1 | 1 | 0 |
| Harpley, M. J. | 1 | 1 | 0 | Mitchell, R. | 0 | 10 | 6 |
| Heyes, G. | 1 | 1 | 0 | Mitchell, G. | 3 | 3 | 0 |
| Hill, J. W. | 5 | 5 | 0 | Mole, W. | 0 | 10 | 6 |
| Hills, O. J. | 3 | 3 | 0 | Moir, C. | 1 | 1 | 0 |
| Hinge, D. | 1 | 1 | 0 | Moon, J. | 1 | 1 | 0 |
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| Hodgkinson, E. | 0 | 10 | 6 | Moore, T. | 1 | 1 | 0 |
| Hopkin, F. | 6 | 6 | 0 | Moreton, R. | 1 | 0 | 0 |
| Houston, W. | 0 | 10 | 6 | Morgan, G. | 1 | 1 | 0 |
| Hubbick, C. | 1 | 1 | 0 | Mulvey, W. | 1 | 1 | 0 |
| Hunting, D. | 0 | 10 | 6 | Murphy, M. | 1 | 1 | 0 |
| Hunting, W. | 1 | 1 | 0 | Naylor, W. E. | 1 | 1 | 0 |
| Hutcheon, D. | 1 | 1 | 0 | Nuttall, E. | 1 | 1 | 0 |
| Irving, J. | 1 | 1 | 0 | Olver, H. | 1 | 1 | 0 |
| James, J. C. | 1 | 0 | 0 | Olver, T., jun. | 1 | 1 | 0 |
| Jarvis, F. | 2 | 2 | 0 | Over, A. | 0 | 10 | 0 |
| Jeeves, J. F. | 1 | 1 | 0 | Overed, J. D. | 0 | 10 | 0 |
| Johnston, W. | 1 | 1 | 0 | Owles, A. | 2 | 2 | 0 |
| Jones, A. | 1 | 1 | 0 | Page, C. N. | 1 | 1 | 0 |
| Kennedy, W. | 1 | 1 | 0 | Paley, D. | 2 | 2 | 0 |
| Kettle, B. | 1 | 0 | 0 | Pallin, W. | 1 | 1 | 0 |
| Kidney, G. | 1 | 1 | 0 | Panton, W. | 0 | 10 | 6 |
| Kidd, H. | 0 | 10 | 6 | Parker, J. | 1 | 1 | 0 |
| Killick, J. A. | 2 | 0 | 0 | Paton, J. | 1 | 1 | 0 |
| King, — | 1 | 1 | 0 | Paterson, R. | 0 | 10 | 0 |
| Knight, R. | 1 | 1 | 0 | Peele, H. | 1 | 1 | 0 |
| Knott, S. | 1 | 1 | 0 | Peele, J. E. | 1 | 1 | 0 |
| Lambert, J. D. | 3 | 0 | 0 | Penhale, W. | 1 | 1 | 0 |
| Lambert, T. D. | 5 | 0 | 0 | Penhale, W. | 0 | 10 | 6 |
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| Wiggins, J. | 1 | 1 | 0 |
| Williams, Prof. | 2 | 2 | 0 |
| Withers, H. | 1 | 1 | 0 |
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| Woodger, E. | 1 | 1 | 0 |
| Woodger, J., jun. | 1 | 1 | 0 |
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| Wragg, F. W. | 1 | 1 | 0 |

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| Forbes, C. (Australia) | 1 | 1 | 0 |
| Hamilton, J. L., M.R.C.S. | 1 | 1 | 0 |
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| Kerr, M. | 1 | 0 | 0 |
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| Lawson, A., <i>in memo-</i> <i>riam</i> | 2 | 2 | 0 |
| Mackay, Sellers & Co. | 3 | 3 | 0 |
| Ring, Mrs. | 2 | 2 | 0 |
| Sheffield, S. | 1 | 1 | 0 |
| Thompson, J. R. | 1 | 1 | 0 |
| Torr, C. H. | 1 | 1 | 0 |
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Audited and found correct, by Messrs.
H. T. BATT and T. G. BATT,
May 10th, 1879.

ARMY APPOINTMENTS.

WAR OFFICE, *May 16th.*

VETERINARY DEPARTMENT.—The undermentioned gentlemen to be Veterinary Surgeons on probation:—Arthur Wilberforce Mason, in succession to Veterinary Surgeon S. T. Goddard, Royal Artillery, placed on retired pay; Edmund Day, in succession to Veterinary Surgeon (First Class) J. Ferris, Royal Artillery, placed on temporary half-pay; Charles Rutherford, in succession to Veterinary Surgeon (First Class), T. J. Lang, Royal Artillery, deceased; Edmund Woods Goldsmith, in succession to Veterinary Surgeon W. Oliver, Royal Artillery, retired upon half-pay; Kay Lees, on augmentation.

OBITUARY.

THE LATE PROFESSOR VARNELL.

THE subjoined letter of condolence from the Members of the EASTERN COUNTIES VETERINARY ASSOCIATION to the family of the late Professor Varnell has, with the reply thereto, been forwarded to us for publication. We readily give insertion to them, and at the same time desire to express our individual sympathy for the loss his relatives have sustained.

“On behalf of the EASTERN COUNTIES VETERINARY MEDICAL ASSOCIATION, and the Veterinary Profession generally, We, the undersigned veterinary surgeons and former pupils of the late Professor Varnell, beg to tender our condolence and respectful sympathy with his relatives in their present great affliction through the irreparable loss they have sustained by his lamented death, by which also the veterinary profession has been deprived of one of its brightest ornaments, and those who had enjoyed the privilege of his acquaintance, of a sincere friend.

“He whose loss we now mourn has gone the way of all flesh, and we shall see him no more on earth; but the remembrance of his public services, no less than his private virtues, will be gratefully cherished by us till we too shall receive the final summons, when, by God’s mercy, we hope for a blessed reunion in those realms of eternal light and glory where pain and sorrow are unknown.

“We beg to subscribe ourselves yours very faithfully,

“A. H. SANTY and Others.”

BEACH HOUSE, BELTON,

A. H. SANTY, Esq., M.R.C.V.S.

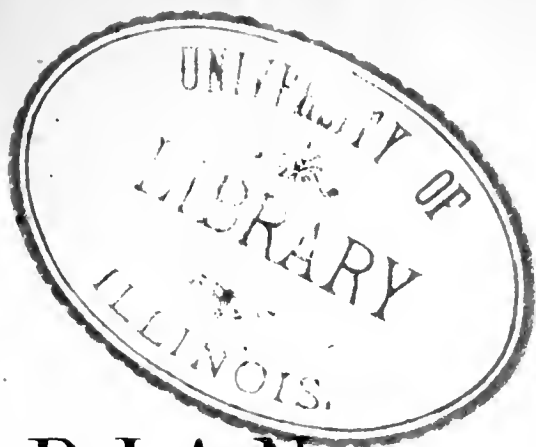
May 12th, 1879.

Dear Sir,—On behalf of the family of the late Professor Varnell I beg to offer to you, and through you to the Members of the Eastern Counties Veterinary Medical Association, and the Veterinary Profession generally, their best thanks for your kindness in offering your condolence to them on the sad loss they have sustained, and to assure you that they will ever esteem and value your sympathy on this melancholy occasion, and sincerely reciprocate the kind wishes expressed in your memorial.—I have the honour to be, dear sir, yours truly,

R. WALDEGRAVE PACKER.

ERRATUM.

At p. 397 for Mr. Joseph Semple *read* Mr. Joseph Temple.



THE
VETERINARIAN.

VOL. LII.
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JULY, 1879.

Fourth Series,
No. 295.

Communications and Cases.

ON THE OCCURRENCE OF THE LARVÆ OF
BLAPS MORTISAGA IN THE HORSE.

By T. SPENCER COBBOLD, M.D., F.R.S., F.L.S., Professor of
Helminthology, Royal Veterinary College.

ALTHOUGH it is very well known that the churchyard beetle, both in its larval and imago states, is liable to present itself as a parasite in the human body, yet, so far as I am aware, no instance of its occurrence in the horse has hitherto been placed on record.

On the 27th of May I received by post from Mr. John W. Evans, V.S., Royal Horse Artillery, stationed at Aldershot, a pill-box containing a live maggot, which I was requested to identify; and, referring to the specimen as a parasite, Mr. Evans says:—"The horse that it came from is a six-year old, by Speculum. The animal has fallen off in condition, is very irritable in the stable, and for about six months has been bothered with this class of worm. The administration of Spiritus Terebinthinæ and Aloes Barbardensis affords temporary relief."

So singular a form of equine parasitism naturally excited my attention—especially on account of the well-known habits of this coleopterous insect—and, accordingly, I wrote to Mr. Evans informing him as to the character of his "find," and requesting a few additional particulars. Thus, I further learnt that only "a very few of the parasites have been observed;" these passing with the fæces "before as well as after giving medicine."

Considering the character of the maggot, and assuming the case to be a genuine instance of intestinal parasitism, it is easy to understand how the presence of even a very few of the larvæ would be sufficient to excite irritation and consequent symptoms of the reflex kind. Had there been numerous maggots present, the restlessness might have become tetanic, convulsive, and incontrollable. At all events, less formidable-looking parasites have been known to bring about these results, both in human and equine hosts.

If it be asked how such parasites could possibly gain access to the stomach and intestines of solipeds, the answer is not far to seek. The earth-eating habits of horses, elephants, and other quadrupeds (suffering from intestinal irritation) has already been dealt with by myself in former issues of the *Veterinarian*, and I cannot now enlarge upon it further than to say that, in the present instance, it is probable that mere foul feeding or bad forage supply has been sufficient to account for the introduction of the maggots in question. In my new treatise on Parasites I have referred to this subject in connection with the entozoa of man; and, since this work has not yet found its way into the hands of many members of the veterinary profession, I cannot better explain the general habits of the churchyard beetle-maggot than by reproducing, with verbal alterations and additions, the very condensed summary of facts which I have there put forward.

Apart from cases recorded abroad, probably not less than half a dozen instances of the occurrence of the larvæ of *Blaps mortisaga* in human patients have been noticed in the United Kingdom. The Rev. J. F. Hope's 'Catalogue' (quoted at length in my introductory treatise on the entozoa, p. 416) gives three examples. Sir John Rose Cormack published a fourth case (in 1841), and I gave details of a fifth case in the *British Medical Journal* comparatively recently (1877). The case by Crumpe (1800), if referable to this species, will make up the sixth. In the above-quoted instance brought under my own observation I received a single living larva from Dr. Horne, of Barnsley, who procured it from an infant eleven weeks old. In the far more remarkable instance of the Irish girl, Mary Riordan, the patient not only passed per anum upwards of 1200 larvæ, but also several perfect insects. The case was reported by Pickells, Thomson, and Bellingham. One of the other authentic cases, in which only a few larvæ were present, was recorded by Patterson, of Belfast, and the third by Bateman. I may mention that Hope's

'Catalogue' originally appeared in the 'Transactions of the Entomological Society,' being afterwards published in the pages of the *London Medical Gazette*, 1837.

As regards the mode in which the maggot gained access to the child in Horne's case, it was not easy to decide; but in the case of the girl Riordan the mode of ingress was sufficiently explained. The *Blapsidæ*, considered as a family, are closely allied to the meal-worms, and, like most of the *Tenebrionidæ*, are black and foul-smelling beetles, frequenting dark and damp situations, from which they retreat only at night. The family comprises numerous species, of which probably not more than three are found in this country. They are abundant in Africa, especially in Egypt, where the women eat *Blaps sulcata* cooked with butter in order to make them grow fat. The insects are also employed as specifics against ear-ache and the bite of the scorpion. The superstitious notion of a "charm" is generally at the bottom of these domestic remedies. In Riordan's case, as Westwood observes, the parasites "probably originated in an absurd and superstitious practice, which she had for some time followed, of drinking daily for a certain time a quantity of water mixed with clay, taken from the graves of two Catholic priests, and eating large pieces of chalk. One of these beetles was immersed repeatedly in spirits of wine, but revived after remaining therein all night, and afterwards lived three years." The intolerance of light shown by the perfect insect seems to be equally shared by the larva. Of this fact I had repeated evidence by observing the behaviour of the living specimen sent by Dr. Horne. Thus, when on February 5th, 1877, I placed the maggot on the surface of some moist mould, scarcely half a minute elapsed before it commenced to bore its way downwards, and in less than a minute all but the tip of the tail had disappeared. In like manner, when on the 7th I raised the lid of the box, and found the maggot on the surface of the soil, it almost instantly proceeded to bury itself.

The parasite recently received from Mr. Evans has not acquitted itself precisely in the same manner. Like certain caterpillars, when touched, it lay perfectly still. Placed on the surface of mould (in a small tin box) it immediately feigned death. When, however, the lid of the tin box was replaced and put aside in a quiet place for about ten minutes, I found, on examination, that the maggot had completely buried itself. On June 2nd, at 3 p.m., I reopened the box and found the maggot at the surface of the mould.

It buried itself, however, with all speed, being discomforted by my having, to use a common phrase, "thrown a little light upon the subject." In a figurative sense it may with truth be said that our churchyard beetle-maggots are not the only creatures that deliberately scorn the light of day. On the 20th of June the maggot underwent a change of skin. The ecdysis was complete in all respects; the larva being at first nearly white and transparent, and very active on the following day. Immediately before ecdysis the body visibly diminished in size.

SYNOPSIS OF CONTINENTAL VETERINARY JOURNALS.

By JOHN HENRY STEEL, Demonstrator of Anatomy at the Royal Veterinary College.

(Continued from p. 416.)

Summary.—From the *Revue Vétérinaire*, May, 1879. *M. Neumann*—*Revue Vétérinaire d'Allemagne*:—"Internal Temperature and Urine in Rabid Dogs;" "Congenital Hypertrophy of the Heart and Liver;" "Liver Disease of European Horses in Egypt;" "Psorosperms in the Liver of a Dog;" "Epizootic Disease of Fowls;" "Cancer of the Mammary Gland of a Bitch (with Metastatic Conditions);" "Inoculability of Neoplasms;" "Pathogenesis of Cataract." From the *Recueil de Médecine Vétérinaire*, 15th May, 1879, on "M. Zundel;" also on "Vaseline," by M. Weber. From *Annales de Médecine Vétérinaire*, "La Dourine," by Prof. Trasbot.

From the *Revue Vétérinaire de Toulouse*, May, 1879.

"Veterinary Review of Germany, by M. Neumann." "Under this title we intend to present every three months analytical extracts of the principal periodical publications which appear in Germany, and which bear on the several branches of veterinary science. By these extracts we hope to make known the condition of science among our neighbours, and the different results of work, more or less important, which they produce, as well as to supply workers in our country with bibliographical elements, such as may guide or aid their efforts. Also this source will serve us as a medium by means of which we may become acquainted with many original papers from Russia, Denmark, Holland, &c., and when such

seem to us to present features of real interest, we will give them a place in our review, assured that we thus fulfil the desire of our readers."

"The Animal Temperature and character of the Urine in Rabies of the Dog," by Mouin (*Archiv für Veterinarmedicin*, of St. Petersburg, and *Revue für Thierheilkunde*, May, 1878). On eighteen observations the author bases the following propositions:

(1) Rabies of the dog is a febrile malady, the temperature rising to 39° C. or 40° C. Before death it often falls to 26° C. by regular decrease. Death always occurs with the minimum temperature.

(2) The density of the urine and its richness in urea are increased at first, but they diminish a little before death, whilst, on the contrary, the proportion of principal salines, and especially of phosphates and sulphates, is then more considerable. The urine also contains albumen and bile-colouring matter.

"Congenital Hypertrophy of the Heart and of the Liver," by M. Anacker (*Der Thierarzte*, 1877, No. 12, et *Revue für Thierheilkunde*, May, 1878). A calf, aged about eight days, died without previous indications of disease. At the autopsy was found considerable increase in volume of the heart and of the liver. The latter had assumed a deep brown colour, and its section presented the peculiar appearance termed "nutmeg liver." The lungs exhibited general œdema, to which it was decided death must be attributed. The author attributes this œdema to the obstacle to function resulting from the hypertrophy of the heart. In this case the youth of the subject is of note, and renders the case interesting as being congenital.

"On the disease termed 'Liver Affection,' observed in European horses transported into Egypt," by Dr. E. Villoresi, of Cairo (*Revue für Thierheilkunde*, June, 1878). Very few European horses imported into Egypt remain entirely free from this affection. From some, often most prominent symptoms, the veterinarians who first observed it considered they could determine its hepatic origin, and gave it the general designation, "Liver Affection." *Symptoms*—No premonitory signs, sudden loss of appetite, drowsiness, pendant ears, staring coat, straddling gait, diminished sensibility, dull and glassy eyes, yellowness of visible mucous membranes, pulse weak and quick, temperature of general surface of body irregular, internal temperature raised 1° C. to 10° C., fæces scanty, yellowish, and foul-smelling; urine scanty, and passed at long intervals, thick and bloody. These symptoms

increase gradually in intensity, and on about the fifth day become complicated with very intense dyspnœa. Then the movements of the flanks are hasty, the nostrils widely dilated, and often presenting a yellow discharge; extremities are cold, and frequently œdematous; conjunctiva acquires a deep yellow colour; petechiæ appear on this membrane, and sometimes the cornea loses its transparency; when the horse moves he does so with hesitation and unintentionally, and movement of the limbs is accompanied by more or less marked crackling of the joints. The internal temperature is increased to 40° or 41° ; the flanks heave more and more, and the animal falls and dies quietly on about the seventh day. *Lesions.*—Rigor mortis soon sets in, and the abdomen very early becomes distended with gas; peritoneum is hyperæmic and contains much serosity. These conditions are even more marked in the pleura. Injection, thickening, and softening of gastric and intestinal mucous lining, and here we observe patches, deprived of epithelium, surrounded each by a prominent ring, and occurring throughout the whole length of the intestinal canal. The glands of the canal (Peyer's glands but partially), are increased in size, and purulent. The liver the author has only found to present that slight congestion which always accompanies serious disorder of the system. So he considers the name "liver affection" unsatisfactory, since the condition of the liver is a result and not the cause. The yellow tint of the mucous membrane, the disease of the lungs and intestines are not produced by the liver. M. Villoresi, from the symptoms and lesions observed, of which we have reproduced those which are essential, considers this affection as an intestinal typhus, and gives it the name "Typhoid bilious fever of European horses in Egypt." He does not consider it contagious. Horses which become affected belong to different European breeds. Those which are especially predisposed are French (Percherons and Normans), English, and still more, Russian, Hungarian, Italian; and among the latter those which are bred in the Maremma. In young and robust subjects the disease is more violent, and runs its course either to a favorable or unfavorable result more rapidly. In aged animals its progress is slower, and the effects of treatment are much less certain. Arab horses and those born in Egypt are seldom affected, and suffer only from a light and benign form of the disease. Hunting dogs imported into Egypt are subject to a similar malady, which is not true distemper, but a species of typhus similar to that of the horses. The *etiology* is obscure; the author gives the

ordinary list of causes—predisposition, climate, food, water, &c. *Prognosis* varies as the first curative attempts are successful or the reverse. *Treatment*.—Hygiénic, consists in all those means which are considered prophylactic, good stables, avoidance of rapid changes of temperature, regulation of warmth of the surrounding medium, also of food, as especially only the gradual substitution of barley for oats. Occasional administrations of mild cathartics, &c. Curative treatment comprises use of aloes, lime water, cold baths, douches, stimulants externally (especially to the thoracic walls), tartar emetic, sulphate of quinine, alcohol, &c., as the symptoms indicate. Bleeding is always prejudicial. So this disease seems to us a form of those affections which in France we call typhoid. The climatic conditions determine the special form which it exhibits, and confer upon it such interest that we have deemed it right to examine it at some length here.

“Oviform bodies in the Liver of a Dog; comparable with the Hepatic Psorosperm of Rabbits,” by Perroncito (*Zeitschrift für Vet. Wiss.*, Berlin, 1877). In a dog destroyed for teaching purposes, whose intestine contained many tæniæ (*T. serrata* and *T. cucumerina*), were found on a section of the liver, which presented also red puncta, small spots of a yellowish-white colour surrounded by sinuous passages similar to those which indicate the course of the biliary canals in the liver of a rabbit affected with psorosperms. By microscopic examination these spots were found to be composed of ovoid cells, with thick walls enclosing a number of granules and corpuscles of a caseous and fatty nature. These cellules were situated in the biliary canals which had lost their epithelial lining at the seat of the collection. In form, seat, position, and resulting lesions, then, they remind us of the psorosperms of rabbits. This important observation is deserving of record here, for, though psorospermism has been often noted in domestic rodents, it has seldom been observed in the dog. For further details of this affection we will refer our readers to the interesting report by M. Railliet on the disease as occurring in the rabbit (Soc. Centrale de Méd. Vét. Séance du 28 Novembre, 1878).

“An epizootic Affection of Fowls,” by Mayer (*Repertorium of Hering and Vogel*, 1877). This epizootic has been observed in March and April, 1877, at Rothenberg, Tübingen, Ludwigsburg, and Ulm. It sometimes assumed a diphtheritic, sometimes a form of pulmonary typhoid nature. The following were the *symptoms*: somnolency,

loss of appetite, vomiting, viscous condition of fæces, purple colour of comb, harsh voice, difficult respiration. The disease rarely lasted more than a day. *Autopsy* showed a blueish condition of the skin, the flesh rapidly putrefied, pharyngeal mucous membrane congested and covered with mucus; crop filled with a soft fetid mass, intestinal mucous membrane inflamed, liver yellow and hypertrophied; gall bladder distended with bile, lungs gorged with blood; heart petechiated on its outer and inner surfaces, right auricle and ventricle filled with blood. The result of the treatment employed was entirely negative. It is necessary to separate the sick from the healthy and disinfect freely.

“Cancer of the Mammary Gland and Cancerous Metastasis into different Organs in a Bitch,” by Pflug (*Zeitschrift für pr. Vet. Wiss. de Pütz*). In the case of a bitch aged fifteen years the author removed a tumour as large as a child’s head which had developed in the three posterior mammary lobes on the right and in the last lobe on the left. Microscopic examination showed the alveolar structure and other diagnostic appearances of carcinoma. The wound healed rapidly under the influence of carbolic dressing, and on the twenty-first day the animal left the hospital perfectly cured. But the success was only apparent. The general health of the patient became gradually less satisfactory, and symptoms of uræmia appeared. Nine days after the second entry into the hospital, fifty-four days after the operation, she succumbed in a state of extreme emaciation. *Post-mortem* examination showed metastatic productions in the liver, spleen, lungs, cervical and mesenteric lymphatic glands and bladder. The author considered as a secondary formation a large tumour, composed of two parts, which involved the left kidney and its ureter.

“On the Inoculability of Malignant New Formations,” by Nowinski (*Archiv für Veter. of St. Petersburg and Revue für Thérap.*, May, 1878). In spite of the researches of many authors, and notably Dupuytren, Alibert, Lebert, Vogel, Valentin, Leblanc, Billroth, Langenbeck, Weber, Virchow, the question of inoculability of malignant neoplasms is not yet resolved, the positive and negative evidence seeming to about counterbalance each other; hence Nowinski resolved to undertake the experiments of which we shall give a hasty *resumé*. His researches concern carcinoma and sarcoma, and he took care to make his attempts at transmission with animals of the same species as those which furnish the matter used for inoculation. His method of operation consisted in making an incision into

the skin, which had previously raised and cleansed with care, of from five to fifteen mm. in length, involving the whole thickness of the membrane. The blood from the seat of operation was removed with a sponge, and particles of the tumour were then introduced into the wound. The largest wounds were closed by suture, the smallest were allowed to remain open. The matter used for inoculation was taken directly from the diseased animal or from a tumour which had just been removed, and care was exercised lest suppurating or bleeding parts of it be taken. The operation did not last more than two minutes. Nowinski used medullary cancer, epithelioma and myosarcoma. Forty-four experiments with epithelioma conveyed from one horse to another and with medullary cancer from dog to dog gave only negative results. No importance was attached to the size of the inoculation wounds and of the inserted parts taken mostly from seats of inflammation. Each time suppurative inflammation of the wounds resulted. In another series of experiments made with similar matters to those mentioned above the results were in all cases positive. Here care was taken that the incisions were very small, and that the portions of new growth also were minute, not more than two millimètres in their longest dimension. The wounds soon cicatrised by first intention; but some months afterwards there formed at the seat of inoculation new growths of the nature of the inoculated matter. Hence the author concludes that tumours of the kind with which he has experimented are transmissible by inoculation, but that success of any experiments in this matter depends upon smallness of the particle introduced and smallness of the inoculation wound. Also communication should be made between animals of the same species.

“Researches on the pathogeny of Cataract,” by Deutschmann (*Græfe's Archiv für Ophthalmologie*, 1877). The results of these researches are embodied in the following propositions:

1. When we examine the crystalline membrane of a living animal or of a man we find between its anterior surface and epithelium of one side in its thickness, and between its posterior surface and the external layer of the other side, a thin layer of albuminous matter (subcapsular). In dissections, the crystalline being no longer protected from evaporation of its moisture, this albuminous layer coagulates under the form of brilliant and limpid droplets which bound regular polygonal figures. With staining by

nitrate of silver we may obtain false appearances of endothelium.

2. A similar albuminous layer (subepithelial) occurs between the epithelium of the capsule on the one hand and the fibres of the anterior cortical layer on the other, to as far as where the cells become fibres.

3. That capsular epithelium is insufficient to protect the crystalline from the influence of the aqueous humour.

4. When the crystalline is separated from surrounding parts and placed in contact with solutions of sea salt or of sugar of definite concentration, cataract is produced by concentration of some of the water of the lens. A one-twentieth solution of sugar acts thus as one fortieth of salt.

5. When we inject a concentrated solution of salt or of sugar into the anterior chamber of the eyes of large living mammals, subtraction of moisture produces a temporary cataract and also simultaneously a slight opacity of the cornea. Excessive secretion of aqueous humour at once dilutes the injected solution; hence the opacity of the lens is superficial and transient.

6. Opacity of the crystalline, such as occurs in living animals after a diet containing much salt or sugar, is also due to a removal of moisture. Analysis of the humours of the eye confirm this.

7. When seen under the microscope all cataracts produced by removal of water manifest the same invariable characters: a number of clear, bright vacuoles, with double outline situated in the epithelium of the capsule and in the fibres of the crystalline.

8. Weak solutions of salt and sugar in the living animal only produce swelling of the crystalline, with very slight opacity.

9. Opacity of the cornea resulting from injections of concentrated solutions of salt and sugar into the anterior chamber is due to gradual modification of the endothelium of the membrane of Descemet.

10. Opacity of the crystalline in diabetes mellitus cannot be explained by the withdrawal of moisture under the influence of excess of sugar in the humours of the eye; for chemical analysis of these humours in only a very small number of such cases indicated presence of sugar.

We find the following in the *Recueil* for 15th May, 1879:

“Our fellow-worker, of Strasbourg, M. Zundel, has just been nominated Knight of the Order of St. Stanislas, of Russia. This distinction bears witness to the value attached by the Russian Government to his work on the subjects

‘Rinderpest and International Sanitary Police.’ Our readers well know how M. Zundel in his interesting periodical records, always endeavours to spread the opinion that the different countries of Europe, by arming themselves with uniform sanitary regulations, could give each other sufficient guarantees that international commercial relations be not interrupted by the appearance of rinderpest in any of them. If such opinions were general, Russia herself would see opened to her live stock markets at present closed to them. M. Zundel reasonably maintains that the countries neighbouring on Russia would have dangers of invasion by cattle plague lessened, if by supervision of the routes of Russian cattle towards the places of sale this traffic were regulated rather than, as now, by offering an absolute prohibition, the considerable bait which allows contraband trade to realise the depreciation of Russian cattle which is caused by the obstacle to importation. M. Zundel, by constituting himself defender of a cause which so largely bears on the matter of the food supply of Europe, has well deserved notice, especially that which is now accorded to him by the Russian Government.”

The *Progrès Médicale*, of the 31st May, 1879, announces the names of four candidates for the Chair of General Physiology, at the Museum d'Histoire Naturelle de Paris. The names submitted to the Minister of Public Instruction by the Professors of the Museum are, first on the list, M. Bouley, of the Institut, Inspector-General of the Veterinary Schools, second, M. Arnaud Moreau. No other candidates had their names submitted. We look forward with much interest to M. Bouley's success.

“On Vaseline,” by M. Weber. The following remarks are based on an experience of its use for five months. It is not, properly speaking, a medicament, being rather an excipient. It is a mixture of solid and liquid hydrocarbons, introduced by an American, named Chesebrough, and has certain of the properties of fats, but with the advantage that it does not become rancid. Hence, in many cases it may advantageously replace lard. During distillation of petroleum, after removal of the more volatile matters, there remains in the distilling apparatus a semi-liquid mass, the crude vaseline; this is purified by exposure to air decolorised by means of animal charcoal. The product is white, inodorous, of the consistence of a very greasy fatty substance, melts at 35° C., boils at 150° C., and burns without residue. Under the prolonged action of light, vaseline acquires a slight odour of petroleum, but this will not restrict its use in veterinary

practice. Insoluble in water, and but little soluble in alcohol, it is freely soluble in fats, essential oils, chloroform, and carbon disulphide. It dissolves iodine, sulphur, phosphorus, benzoic and carbolic acids, and almost all alkalis; it neither rancifies nor saponifies, and hence is useful as an excipient for caustic alkalies, oxides, and metallic salts and acids, since it is not acted upon by them; from this we may infer that it is likely to prove very useful in practice. It has a marked emollient action when applied to the skin, and as an excipient is preferable to lard, and even to glycerine, which is not similarly useful because of its solubility in water. In Germany it is administered internally in diseases of the respiratory organs. When applied to the skin of the dog, it will not tempt the animal to lick himself, and so ingest the medicament applied, for lard thus proves sometimes inconveniently like the animal's food. During the moist days of winter it was employed with success for psoriasis of the limbs, cases where ordinary unguents succeed so seldom, also in cases of cracks. With sulphur in proportions of three to ten of the vaseline, it forms a pomade in which the greater part of the sulphur is dissolved, which is useful in psoriasis to protect the parts from mud and moisture. In certain forms of ringworm of the dog, good results followed application of vaseline and iodide of sulphur. Mixtures of vaseline and caustic alkalies would be useful in cauterization of tumours, with lard or glycerine, caustic potash readily takes up moisture and undergoes decomposition."

Mémoire on "Dourine," by L. Trasbot (Professor), from *Archives Vétérinaires d'Alfort and Annales de Méd. Vét.*

"*Principal Symptoms.*—Appetite good during the first period; considerable falling off in condition of the patient without any appreciable visceral affection to which to attribute it. Temperature at the rectum normal. Respiration and pulse slow. The author attributes the wasting to perversion of nutrition, and not to excessive waste. Arthritis of the left hock occurred without any apparent cause from without—cutaneous plates found by slight thickening of the dermis, erection of the hairs, and a crusty condition of the epidermis, serous tumours, difficulty in passing of urine, swelling of visible lymphatic glands, sudden paralysis sharply, at a given phase of the attack, passing from one limb to another, then paraplegia. In one of the two subjects under observation during the course of the attack a small hemispherical elevation of about 2—3 mm. in size, and transparent, pale yellow colour appeared at the margin of the urethral tube.

Soon after similar eruptions occurred on different parts of the penis. All of these were identical in nature, they were true papules of a specific kind, they did not seem to be painful. In the course of two days the central mass of these elevations, hitherto transparent and solid, became opaque, white, and so soft as to fall off on slight pressure, leaving a rather deep cavity, of a red colour and finely dotted with points. At the end of a few hours it becomes covered with an opaque, pultaceous coat, of a greyish-white colour, and this shortly becomes very prominent. These lesions resemble those of syphilis. *Autopsy*.—The most marked lesions were observed in the lymphatic glands and the skin. M. Trasbot describes these minutely, and concludes they are special and belong exclusively to the dourine. "In all parts of the body," he says, "the lymphatic glands were enlarged, of a dark red colour, and surrounded by a slight serous infiltration of an amber-coloured serum into the surrounding areolar tissue; where these glands lie in masses, as at the root of the lungs, in the femoral space, &c., they form masses three or four times the normal size. In spite of the considerable swelling, of which they were the seat to a more or less marked degree, they always preserved their normal consistence. Their interfollicular connective tissue was simply a little infiltrated, but never indurated. On section each gland examined separately showed three or four times its normal diameter and a red colour, due simply to vascularity. It was in no case softened nor purulent nor even ecchymosed by interstitial hæmorrhages. Careful examination of the hardened glands by means of the microscope confirmed the above characters. Each follicle ranged in diameter from $\frac{2.0}{10.0}$ to $\frac{4.0}{10.0}$ mm., instead of $\frac{1.0}{10.0}$ to $\frac{1.5}{10.0}$ mm., which is the normal diameter in the horse. It was completely filled with lymphoid cells which were regular in most parts, especially the outer zone, and a little small, shrunken, and polyhedral from mutual pressure in the centre. Around the follicle may be seen a capillary network, forming a very rich anastomosis in fine connective tissue, which is transparent and shows no signs of inflammation. Thus, there was simple hypertrophy of the lymph follicles, and of the interfollicular capillary network. This is a condition which can be compared with nothing which has been hitherto studied in the horse. It could not have resulted from a simple irritation, for either that would have been ephemeral, and thus would have produced a simple congestion terminated soon by resolution; or acting more rapidly it would have caused suppuration, which occurs with exceptional facility in the organism of the

horse. Nor is it comparable with the alteration which attends a Glanders diathesis, for in that case there is produced in each gland a little purulent centre, which is limited by the rapid and increasing induration of the surrounding cellular tissue, and thus is arrested in its development and undergoes caseous change. Lastly, it is not analogous with Lymphoma which commences in a mass of gland, acquires enormous proportions and extends to the tissues of different parenchymatous organs." These lesions like those of the skin belong specially to the dourine, and we are most tempted to compare them with certain lesion resulting from syphilis."

The author has made some experiments from which he arrives at the following results :

1. That the blood of one of the patients affected with dourine when introduced into the system of a healthy mare produced no effect.
2. That the liquid from the mucous plates produced a local lesion when introduced into a healthy horse by inoculation.
3. That coition seemed harmless, though several times repeated, between an affected horse and two healthy mares when the penis of the male was unaffected.
4. That coition when the penis of the same stallion bore mucous plates transmitted the disease.

THE PRINCIPLES OF BOTANY.

By Professor JAMES BUCKMAN, F.G.S., F.L.S., &c. &c.

(Continued from p. 253.)

IN the several papers which we have written on this subject it has been our aim, while explaining a very comprehensive system of classification, to point out the economic or medicinal value of some of the leading plants of each order.

From the facts that have from month to month been brought before our readers we trust it will not be difficult to make out how important is the science of botany to all who have to advise on the curing or feeding of various kinds of animals, seeing that either as food or medicine plants ought to be consulted at every turn.

This is an opinion that was recognised from very early times ; but in the past, as we have so frequently pointed out,

plants were used as medicines upon the most fanciful assumptions; hence the doctrine of signatures which prompted the use of coltsfoot and common lungwort in coughs and lung diseases, on account of the white blotches on their leaves, supposed to simulate the appearance of slices of the lung, and therefore to miraculously or mercifully point to its uses as a cure in the disease of that organ.

Take, again, the curiously-formed leaf of the navelwort, which, from a depression in the centre of the leaf not unlike the umbilical pit in the human stomach, was formerly, and is still, employed by the rustics, both as an internal medicine and an ointment for children supposed to be afflicted with weak stomachs.

We recollect once, in Wiltshire, as we were gathering some specimens of the *Cotyledon umbilicus* (navelwort) for our herbarium, we were set upon by a couple of ancient females, who told us, in not overpolite terms, that we were doing mischief in destroying the plant, as it was a great deal more useful to the world than ourself was likely to be.

Not to pursue this subject too far, we may point to colour as being held to be an indication of medicinal value; thus, saffron for skin diseases, fevers, eruptive and otherwise, as making people look yellow and sickly, is a common adjunct to remedies in such cases; and yellow Barbary bark is a rustic favourite in jaundice, both for man and the inferior animals, as is also turmeric as an adjunct in a cow's drench for yellows.

In the present day, however, though some of these may be employed in the dispensary, more as a colouring matter than for any other purpose, they are not relied upon as they once were; but, instead of all this, plants are studied, not only as regards their anatomical details, as teaching us to classify and arrange them, but also their nature and composition, is made out by the chemist with the utmost exactitude so that the philosophy—not the guessing—of their action is known both to the physiologist and the therapist.

Still, that botany is not enough studied in the human school, and certainly much less so in the veterinarian school, may be concluded from the fact that few medical men go beyond the Pharmacopœia in the vegetable remedies they employ; and though the cow-leech has even a wider range of vegetable remedies, these are for the most part employed upon the pious doctrine of signatures.

But if we look a little deeper into the subject, we shall find that a knowledge of plants may be expected to lead to the settlement of some important questions which at present

are far from a clear solution. Let us take, for example, the still vexed question of the action of yew upon the horse and cow ; how contradictory are the conclusions concerning it ! One person has known animals to eat ravenously of fresh yew without any mischief, while another points to great losses from access to yew plants. All agree that the dried leaves are poisonous, and that in this state it is most virulent. How much, then, there is in this matter for observation and experiment conducted upon scientific principles.

Taking the matter of plants as pasturage, how curious it is that one field should produce diarrhœa in stock depasturing it, while the attack is immediately arrested by change to another field. Farmers soon learn by experience that one field will scour while another has the opposite effect ; but while their botany is doubtless the main cause of this, the wherefore is but ill understood, as but few people care to know anything of the nature of the plants of which a meadow may be composed.

Take, again, that extraordinary disease known as splenic apoplexy. People are, for the most part, agreed that either the kind or the condition of the vegetation is mainly concerned in the matter, but as yet no systematic inquiry has been instituted to solve the difficult questions involved.

Now, in bringing this first series of papers to a close, we would point out that, in reviewing one family of plants after another, we have endeavoured to explain the medicinal and dietetic use of different plants ; and, indeed, we have been told that so much useful matter has been brought together upon the subject, that we should confer a benefit upon the profession by collecting the papers in a separate volume. This, however, is too great a sacrifice of time, to say nothing of the pecuniary risk, that at present we feel inclined to occupy a little more time in looking further into some of the questions involved in an examination of our native plants, and therefore we contemplate, as it were, the making of an analysis of the composition of our natural herbage, with an especial view of pointing out the nature of pasture, thus directing critical attention to plants in connection with animals.

We cannot help thinking that such a review, more especially of our indigenous species, will, more than anything, lead to thought and inquiry into a most important branch of science.

For the present, then, we bid our readers farewell, thanking them for the patience with which many of them have pursued the subject of botany as we have presented it to

them, and the many kind expressions which have reached us during the progress of our enunciation of the Principles of Botany.

A REMARKABLE CASE OF MAL-DEVELOPMENT OF THE FŒTAL MEMBRANES.

Reported by THOS. HANDY, M.R.C.V.S., Cardiff.

I HAVE forwarded to the Royal Veterinary College, per G.W.R., the placental membranes of a cow, thinking the specimen might be interesting to the students. I have never seen such an instance of mal-development during my fifteen years of extensive cattle practice.

The brief history of the case is as follows:—I was called to see a three-year-old cow that had calved a *dead* calf without assistance; but from the tremendous size of the after-birth, parturition could not be completed. It was for this reason that my services were required. Fully seven hours' continuous labour were occupied in bringing away the membrane, and I should think, without exaggeration, that the cow passed from fifteen to twenty gallons of fluid during this time. On visiting her the next morning she appeared to be doing well. I trust that you will excuse this brief outline of the case, as I am much pressed for time.

[Viewed as a whole, the membranous mass could scarcely be recognised as the fœtal membranes of a cow. It was remarkably red in colour, and weighed between seven and eight stones of 14 lbs. The chorion was principally studded with nodulated masses, which were perfectly smooth on the surface, and in places upwards of two inches thick. Very few cotyledons existed, and none of these were naturally developed. The amnion had a thickness in proportion to the chorion, and only here and there did the membrane resemble its normal condition. It would have been both interesting and instructive to have ascertained the relative proportion of the weight of the fœtus and its membranes.—EDS.]

DISEASE OF THE EYES OF BREEDING EWES.

By W. H. BEACH, Veterinary Student.

THE flock of a gentleman renting a farm on the south-

west border of Staffordshire was attacked in March by a severe disease of the eyes. The breeding flock consisted of 136 ewes, mostly young ones.

The disease first showed itself when the lambing season was about half over, amongst the young ewes, the older ewes having by this time yeaned and "got away."

The previous winter treatment of the ewes was as follows:

On December 5th, 1878, 120 were sent to a farm three miles distant to pasture on some old grass land: about this time there was much frost and snow which prevented them getting at the grass, and to make up for this they had plenty of good hay given them from December 23rd until the 16th of the following January, when they were brought home to all appearances in good condition. Some of the ewes did not go to this farm in consequence of lameness, and they were supplied with turnips and hay. Throughout the remaining part of January and the whole of February, hay was given, and at the commencement of March a few turnips also.

About the middle of March an affection of the eyes was noticed. The ewes could not find their way out of the lambing yard, where they were nightly housed. They appeared to be suffering great pain, the secretion of milk was suspended, and for a time they ceased to ruminate. A M.R.C.V.S. was called in, and directed that the animals should be blistered around the orbit, an operation which was performed by the shepherd. The animals were not kept in darkened sheds, and no medicine was given.

The ewes which lambed while suffering from the malady are said to have dropped their lambs blind, and large numbers of them perished from the ewes laying upon them. More than 100 lambs suffered, and of these 80 have died.

The eyes of about 50 ewes have been affected, and the greater part of them have recovered their sight and condition; but slight opacity of the cornea and frequent nictation are still noticeable.

A few ewes which were suffering from the complaint were put with some feeding tegs; some of the latter became slightly affected.

Lambs born of healthy ewes were not affected. The constitutional disturbance passed off in about a fortnight.

The farm stands high and dry—gravelly soil—with an aspect somewhat easterly. The ewes have all been bred upon the farm. The stamina of the flock is yearly attended to by the introduction of well-bred rams. Some barren ewes were affected but slightly. When they were first attacked a most piercing east wind prevailed, and continued from the

middle of March. A similar malady attacking a flock some four miles distant has been reported. The veterinary surgeon who was called in at once pronounced the disease as being "highly infectious."

Pathological Contributions.

CATTLE PLAGUE.

THIS disease still exists in the Provinces of Bessarabia, Volhynia, and Kherson, but no reports have been received from the other provinces contiguous to Austria and Germany, or from those bordering on the Black Sea.

In Bohemia, cattle plague is declared to be extinct. In Bukowina a decree has been passed allowing Roumanian cattle and raw animal products to be imported subject to the restriction of twelve days' observation.

Reports have been received that the disease has again broken out in Lower Egypt, which was declared free only last month.

A communication from Königsberg announces that cattle plague has appeared at Telschen, in the adjoining Russian province of Courland, on the Baltic. Instructions have been given to the Consul to telegraph immediately to the British Government should the disease advance very near to or cross the Prussian Border.

According to the *Landwirth*, "rinderpest has again broken out in alarming proximity to the Silesian frontier, at a place named Cholerzyn, in the Cracow district, which is only between forty-five and fifty miles from Klein-Chelm, the nearest Silesian point. Already several animals have fallen victims to the disease, which it is feared, will spread to a considerable extent. The outbreak is distinctly traceable to the smuggling in of cattle over the Russian-Polish frontier. Veterinary inspectors have been sent off to Cholerzyn in hot haste, and every possible precaution is being taken to confine the pest within the immediate limits."

The *Mark Lane Express*, alluding to this report, says: "No doubt. But what if it should come into North Germany? Would our Privy Council have the courage to revoke the usual licence recently given to that particular branch of the German cattle trade which is carried on from the port of Tönning? Our cattle breeders will not submit quietly to have German cattle imported here from Schleswig-Holstein or any other part of the Empire, if rinderpest is known to exist within its borders."

| | | | | | | | | | | | |
|--------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Stafford | 3 | ... | 3 | 2 | 3 | 5 | ... | ... | ... | 1 | ... |
| Suffolk | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Surrey (ex. Metropolis) | 1 | ... | 1 | 1 | 2 | 3 | ... | ... | ... | ... | ... |
| Warwick | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Worcester | 4 | ... | 4 | ... | ... | ... | ... | ... | ... | ... | ... |
| York, East Riding | 2 | ... | 2 | 1 | ... | ... | ... | ... | 1 | ... | ... |
| " North Riding | 1 | 2 | 3 | ... | 2 | 2 | ... | ... | ... | ... | ... |
| " West Riding | 15 | 6 | 21 | 5 | 9 | 14 | ... | ... | ... | ... | ... |
| Liberty of the Isle of Ely | ... | 1 | 1 | ... | 1 | 1 | ... | ... | ... | ... | ... |
| The Metropolis | 2 | 2 | 4 | ... | 5 | 4 | ... | ... | 1 | ... | ... |
| SCOTLAND. | | | | | | | | | | | |
| COUNTY.* | | | | | | | | | | | |
| Aberdeen | 9 | 1 | 10 | 3 | 4 | 6 | ... | ... | 1 | ... | ... |
| Edinburgh | 4 | 1 | 5 | ... | 2 | 2 | ... | ... | ... | ... | ... |
| Fife | 5 | ... | 5 | ... | ... | ... | ... | ... | ... | ... | ... |
| Forfar | 2 | ... | 2 | 2 | ... | 2 | ... | ... | ... | 2 | ... |
| Lanark | ... | 1 | 1 | ... | 1 | 1 | ... | ... | ... | ... | ... |
| Perth | 3 | ... | 3 | ... | ... | ... | ... | ... | ... | ... | ... |
| Renfrew | 5 | ... | 5 | ... | 2 | 2 | ... | ... | ... | ... | ... |
| Roxburgh | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Stirling | 1 | ... | 1 | ... | 1 | 1 | ... | ... | ... | ... | ... |
| TOTAL | 120 | 27 | 147 | 28 | 57 | 80 | 1 | ... | 4 | 6 | 12 |

FOOT-AND-MOUTH DISEASE.

| | Farms or other Places. | | | Animals attacked. | | Diseased Animals. | | | | Cases which existed in previous Weeks not reported until this Week. |
|---|--|---|---|--|---------------------------|-------------------|-------|------------|------------|---|
| | Number reported upon this Week which have been previously reported upon. | Number upon which Fresh Outbreaks have been reported to have taken place during the Week. | Total Number reported upon during the Week. | Remaining diseased from the previous Week. | Attacked during the Week. | Killed. | Died. | Recovered. | Remaining. | |
| — | 4 | ... | 4 | 134 | ... | ... | ... | 12 | 122 | ... |
| ENGLAND. | | | | | | | | | | |
| County.* | | | | | | | | | | |
| Cambridge (ex. Liberty of the Isle of Ely). | | | | | | ... | ... | ... | ... | ... |

GLANDERS.

| | Horses attacked. | | Diseased Horses. | | | | Horses attacked. |
|---|------------------|-----|------------------|-----|-----|-----|------------------|
| | ... | ... | ... | ... | ... | ... | |
| ENGLAND. | | | | | | | |
| County.* | | | | | | | |
| Cambridge (ex. Liberty of the Isle of Ely). | ... | 1 | 1 | ... | 1 | ... | ... |
| Essex . . . | ... | 2 | 2 | ... | 2 | ... | ... |
| Middlesex (ex. Metropolis) . . . | 1 | 4 | 3 | ... | 2 | ... | ... |
| Norfolk . . . | ... | 1 | 1 | ... | ... | ... | ... |
| Stafford . . . | ... | 1 | 1 | ... | 1 | ... | ... |

| | | | | | | | | | | | | | | | | |
|---------------------------|---|-----|-----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Surrey (ex. Metropolis) | . | ... | 1 | 1 | ... | 1 | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... |
| Sussex | . | ... | 1 | 1 | ... | 1 | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... |
| Worcester | . | 1 | 1 | 2 | ... | 1 | 1 | ... | 1 | ... | 1 | ... | ... | ... | ... | ... |
| The Metropolis | . | 1 | 3 | 4 | ... | 4 | 3 | ... | ... | ... | 1 | ... | ... | ... | ... | ... |
| WALES.—COUNTY.* | | | | | | | | | | | | | | | | |
| Denbigh | . | 1 | ... | 1 | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| SCOTLAND.—COUNTY.* | | | | | | | | | | | | | | | | |
| Argyll | . | 1 | 1 | 2 | 3 | 1 | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... |
| Edinburgh | . | ... | 1 | 1 | ... | 2 | 2 | ... | 2 | ... | ... | ... | ... | ... | ... | ... |
| TOTAL | . | 5 | 16 | 21 | 4 | 18 | 14 | ... | ... | ... | 8 | ... | ... | ... | ... | ... |
| FARCY. | | | | | | | | | | | | | | | | |
| ENGLAND.—COUNTY.* | | | | | | | | | | | | | | | | |
| Middlesex (ex Metropolis) | . | 2 | ... | 2 | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | 1 |
| Stafford | . | ... | 1 | 1 | ... | 1 | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... |
| Sussex | . | 1 | ... | 1 | 1 | ... | ... | ... | ... | ... | 1 | ... | ... | ... | ... | ... |
| The Metropolis | . | 8 | 2 | 10 | 10 | 6 | 6 | ... | 1 | ... | 9 | 1 | ... | ... | 1 | 1 |
| WALES.—COUNTY.* | | | | | | | | | | | | | | | | |
| Denbigh | . | 1 | ... | 1 | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| TOTAL | . | 12 | 3 | 15 | 13 | 7 | 9 | ... | 1 | ... | 10 | 2 | ... | ... | 2 | 2 |

TYPHOID FEVER OF SWINE.

| | Farms or other Places. | | | Swine attacked. | | Diseased Swine. | | | | Cases which existed in previous Weeks not reported until this Week. | |
|--------------------------------------|--|---|---|--|---------------------------|-----------------|-------|------------|------------|---|-----------------|
| | Number reported upon this Week which have been previously reported upon. | Number upon which Fresh Outbreaks have been reported to have taken place during the Week. | Total Number reported upon during the Week. | Remaining diseased from the previous Week. | Attacked during the Week. | Killed. | Died. | Recovered. | Remaining. | Fresh Outbreaks. | Swine attacked. |
| ENGLAND. | | | | | | | | | | | |
| COUNTY.* | | | | | | | | | | | |
| Bedford | ... | 1 | 1 | ... | 2 | 43 | 9 | ... | 2 | 1 | 28 |
| Berks | 2 | 1 | 3 | 46 | 6 | ... | 1 | ... | 4 | 1 | 4 |
| Chester | ... | 1 | 1 | ... | 5 | 21 | 1 | ... | ... | 1 | ... |
| Derby | 4 | 3 | 7 | ... | 22 | 19 | 1 | ... | ... | ... | ... |
| Dorset | 1 | 1 | 2 | ... | 19 | 66 | 4 | ... | 1 | ... | ... |
| Essex | 2 | 4 | 6 | ... | 71 | 7 | ... | ... | ... | ... | ... |
| Gloucester | 1 | ... | 1 | 7 | ... | 7 | 5 | ... | ... | ... | ... |
| Hants | ... | 1 | 1 | ... | 12 | ... | ... | ... | ... | ... | ... |
| Hertford | ... | 2 | 2 | ... | 29 | 1 | 15 | ... | 13 | ... | ... |
| Huntingdon | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Kent (ex. Metropolis) | ... | 1 | 1 | ... | 22 | 22 | ... | ... | ... | ... | ... |
| Leicester | 1 | 1 | 2 | ... | 3 | 3 | ... | ... | ... | ... | ... |
| Lincoln, Parts of Holland | ... | 1 | 1 | ... | 2 | ... | ... | ... | 2 | ... | ... |
| Middlesex (ex. Metropolis) | 1 | ... | 1 | ... | 5 | 4 | 1 | ... | ... | ... | ... |

| | | | | | | | | | | |
|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Monmouth | 1 | 1 | 1 | 8 | ... | 1 | ... | 7 | ... | ... |
| Norfolk | 7 | 10 | 60 | 60 | 67 | ... | ... | ... | 4 | 22 |
| Northampton (ex. Soke of Peterborough) | 1 | 1 | 2 | 2 | 2 | ... | ... | ... | ... | ... |
| Notts | 3 | 6 | 8 | 8 | 17 | 2 | ... | ... | 3 | 11 |
| Somerset | 5 | 5 | 61 | 61 | 52 | 9 | ... | ... | ... | ... |
| Stafford | 9 | 13 | 35 | 35 | 30 | 9 | ... | 9 | 2 | 9 |
| Suffolk | 5 | 10 | 48 | 48 | 43 | 6 | ... | ... | ... | ... |
| Surrey (ex. Metropolis) | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 3 |
| Sussex | 1 | 1 | 10 | 10 | 1 | 9 | ... | ... | ... | ... |
| Wilts | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| York, East Riding | 1 | 2 | 5 | 5 | 2 | 3 | ... | ... | ... | ... |
| " North Riding | ... | 1 | 1 | 1 | 1 | ... | ... | ... | ... | ... |
| " West Riding | 30 | 33 | 66 | 66 | 60 | 15 | ... | ... | ... | ... |
| TOTAL | 80 | 114 | 502 | 502 | 468 | 90 | ... | 38 | 12 | 77 |

* Counties include such boroughs and burghs as are locally situated within the limits of the Counties, or, if surrounded by two or more counties, then they are included in the county with which they have the longest common boundary. Berwick-upon-Tweed is included in Northumberland.

Veterinary Department, Privy Council Office, 17th June, 1879.

THE CONTAGIOUS DISEASES (ANIMALS) ACT, 1878.

RETURN of the NUMBER of PLACES in GREAT BRITAIN upon which Contagious or Infectious Disease (except Sheep-Scab) has been reported to have existed during the Week ended June 14th, 1879, with particulars relating thereto.

PLEURO-PNEUMONIA.

| | Farms or other Places. | | | Cattle attacked. | | Diseased Cattle. | | | | Cases which existed in previous Weeks not reported until this Week. | |
|---|--|---|---|--|---------------------------|------------------|-------|------------|------------|---|------------------|
| | Number reported upon this Week which have been previously reported upon. | Number upon which Fresh Outbreaks have been reported to have taken place during the Week. | Total Number reported upon during the Week. | Remaining diseased from the previous Week. | Attacked during the Week. | Killed. | Died. | Recovered. | Remaining. | Fresh Outbreaks. | Cattle Attacked. |
| ENGLAND. | | | | | | | | | | | |
| COUNTY.* | | | | | | | | | | | |
| Buckingham | 2 | .. | 2 | .. | .. 12 | .. 12 | .. | .. | .. | .. | .. |
| Cumberland | 6 | .. | 6 | .. | 4 | 4 | .. | .. | .. | .. | .. |
| Derby | 1 | 2 | 3 | .. | 1 | 2 | .. | .. | .. | .. | .. |
| Essex | 6 | 1 | 7 | 1 | .. | .. | .. | .. | .. | .. | .. |
| Hertford | 1 | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. |
| Huntingdon | 1 | .. | 1 | .. | .. | 1 | .. | .. | .. | .. | .. |
| Kent (ex. Metropolis) | 4 | .. | 6 | .. | 2 | 2 | .. | .. | 1 | .. | .. |
| Lancaster | 19 | 2 | 21 | .. | 8 | 7 | .. | .. | 1 | .. | .. |
| Leicester | 3 | 1 | 4 | .. | 1 | 1 | .. | .. | .. | .. | .. |
| Lincoln, Parts of Lindsey | 1 | .. | 1 | .. | .. 3 | .. 3 | .. | .. | .. | .. | .. |
| Middlesex (ex. Metropolis) | 7 | .. | 7 | .. | 2 | 2 | .. | .. | .. | .. | .. |
| Norfolk | 1 | 2 | 3 | .. | 2 | 2 | .. | .. | .. | .. | .. |
| Northampton (ex. Soke of Peterborough). | 8 | 1 | 9 | .. | 2 | 2 | .. | .. | .. | .. | .. |
| Northumberland | 1 | .. | 1 | 1 | .. 1 | 1 | .. | .. | .. | 1 | 1 |
| Notts | 2 | 1 | 3 | .. | 1 | 1 | .. | .. | .. | .. | .. |
| Salop | 2 | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. |

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FOOT-AND-MOUTH DISEASE.

| | Farms or other Places. | | | Animals attacked. | | Diseased Animals. | | | | Cases which existed in previous Weeks not reported until this Week. | |
|---|--|---|---|--|---------------------------|-------------------|-------|------------|------------|---|-------------------|
| | Number reported upon this Week which have been previously reported upon. | Number upon which Fresh Outbreaks have been reported to have taken place during the Week. | Total Number reported upon during the Week. | Remaining diseased from the previous Week. | Attacked during the Week. | Killed. | Died. | Recovered. | Remaining. | Fresh Outbreaks. | Animals attacked. |
| — | 3 | ... | 3 | 102 | ... | ... | ... | 15 | 87 | ... | ... |
| ENGLAND. | | | | | | | | | | | |
| County.* | | | | | | | | | | | |
| Cambridge (ex. Liberty of the Isle of Ely). | ... | 1 | 1 | ... | 3 | 3 | ... | ... | ... | ... | ... |
| Derby | ... | 1 | 1 | ... | 1 | ... | ... | ... | 1 | ... | ... |
| Salop | | | | | | | | | | | |
| TOTAL | 3 | 2 | 5 | 102 | 4 | 3 | ... | 15 | 88 | ... | ... |

GLANDERS.

| | Horses attacked. | | Diseased Horses. | | Horses attacked. |
|------------------|------------------|------------------|------------------|------------------|------------------|
| | Horses attacked. | Horses attacked. | Diseased Horses. | Diseased Horses. | |
| ENGLAND. | | | | | |
| County.* | | | | | |
| Durham | ... | 1 | ... | 1 | ... |
| Essex | 1 | 3 | ... | 3 | ... |

| SCOTLAND. | | | | | | | | | | | | |
|----------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| COUNTY.* | | | | | | | | | | | | |
| Hertford | . | . | . | . | . | . | . | . | . | . | . | . |
| Middlesex (ex. Metropolis) | . | . | . | . | . | . | . | . | . | . | . | . |
| Norfolk | . | . | . | . | . | . | . | . | . | . | . | . |
| Somerset | . | . | . | . | . | . | . | . | . | . | . | . |
| Sussex | . | . | . | . | . | . | . | . | . | . | . | . |
| Worcester | . | . | . | . | . | . | . | . | . | . | . | . |
| The Metropolis | . | . | . | . | . | . | . | . | . | . | . | . |
| Total | | | | | | | | | | | | |
| Argyll | | | | | | | | | | | | |
| Total | | | | | | | | | | | | |
| ENGLAND. | | | | | | | | | | | | |
| COUNTY.* | | | | | | | | | | | | |
| Hertford | . | . | . | . | . | . | . | . | . | . | . | . |
| Middlesex (ex. Metropolis) | . | . | . | . | . | . | . | . | . | . | . | . |
| Sussex | . | . | . | . | . | . | . | . | . | . | . | . |
| The Metropolis | . | . | . | . | . | . | . | . | . | . | . | . |
| Total | | | | | | | | | | | | |

TYPHOID FEVER OF SWINE.

| | Farms or other Places. | | | | Swine attacked. | | Diseased Swine. | | | | Cases which existed in previous Weeks not reported until this Week. | |
|----------------------------|--|---|---|--|---------------------------|---------|-----------------|------------|------------|------------------|---|--|
| | Number reported upon this Week which have been previously reported upon. | Number upon which Fresh Outbreaks have been reported to have taken place during the Week. | Total Number reported upon during the Week. | Remaining diseased from the previous Week. | Attacked during the Week. | Killed. | Died. | Recovered. | Remaining. | Fresh Outbreaks. | Swine Attacked. | |
| ENGLAND. | | | | | | | | | | | | |
| COUNTY.* | | | | | | | | | | | | |
| Bedford . | 1 | 5 | 6 | 2 | 23 | 4 | 3 | .. | 18 | .. | .. | |
| Berks . | 2 | 1 | 3 | .. | 28 | 28 | .. | .. | .. | .. | .. | |
| Chester . | 1 | .. | 1 | 4 | .. | 4 | .. | .. | .. | 1 | .. | |
| Derby . | 5 | 5 | 10 | 3 | 22 | 15 | 10 | .. | .. | .. | 3 | |
| Devon . | .. | 1 | 1 | .. | 1 | .. | 1 | .. | .. | .. | .. | |
| Dorset . | 1 | .. | 1 | .. | .. | .. | .. | .. | 2 | .. | .. | |
| Essex . | 2 | 4 | 6 | 1 | 29 | 24 | 4 | .. | .. | .. | .. | |
| Gloucester | .. | 1 | 1 | .. | 2 | .. | 2 | .. | .. | .. | .. | |
| Hants . | .. | 1 | 1 | .. | 27 | 26 | 1 | .. | .. | .. | .. | |
| Hertford | 1 | 2 | 3 | 13 | 10 | 14 | 9 | .. | 10 | .. | .. | |
| Huntingdom | .. | 1 | 1 | .. | 12 | 2 | .. | .. | .. | .. | .. | |
| Leicester | 1 | .. | 1 | .. | .. | .. | 2 | .. | .. | .. | .. | |
| Lincoln, Parts of Holland | 1 | .. | 1 | 2 | .. | .. | .. | .. | .. | .. | .. | |
| Middlesex (ex. Metropolis) | .. | 1 | 1 | .. | 49 | 49 | .. | .. | .. | .. | .. | |

| | | | | | | | | | | | | | |
|----------------------------|---|---|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Monmouth | . | . | . | 1 | 70 | 443 | 400 | 67 | ... | ... | ... | ... | ... |
| Norfolk | . | . | . | 1 | 7 | 14 | 21 | ... | ... | ... | ... | ... | ... |
| Notts | . | . | . | 3 | ... | 12 | 12 | ... | ... | ... | ... | ... | ... |
| Somerset | . | . | . | 4 | 19 | 29 | 42 | 6 | ... | ... | ... | ... | ... |
| Stafford | . | . | . | 12 | 12 | 26 | 16 | 18 | ... | ... | ... | ... | ... |
| Suffolk | . | . | . | 8 | ... | 36 | 32 | ... | ... | ... | ... | ... | ... |
| Sussex | . | . | . | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Wilts | . | . | . | 3 | ... | 6 | 4 | 2 | ... | ... | ... | ... | ... |
| Worcester | . | . | . | 1 | ... | 3 | 3 | ... | ... | ... | ... | ... | ... |
| York, East Riding | . | . | . | 5 | ... | 15 | 9 | 1 | ... | ... | ... | ... | ... |
| " North Riding | . | . | . | 1 | ... | 1 | 1 | ... | ... | ... | ... | ... | ... |
| " West Riding | . | . | . | 24 | ... | 92 | 85 | 7 | ... | ... | ... | ... | 18 |
| Liberty of the Isle of Ely | . | . | . | 1 | ... | 2 | 1 | 1 | ... | ... | ... | ... | ... |
| Soke of Peterborough | . | . | . | 2 | ... | 4 | 1 | ... | ... | ... | ... | ... | ... |
| TOTAL | . | . | . | 108 | 70 | 443 | 400 | 67 | ... | ... | 46 | 5 | 49 |

* Counties include such Boroughs and Burghs as are locally situated within the limits of the Counties, or, if surrounded by two or more Counties, then they are included in the County with which they have the longest common boundary. Berwick-upon-Tweed is included in Northumberland.

Veterinary Department, Privy Council Office, 24th June, 1879.

CATTLE DISEASES IN FRANCE.

THE proposed CATTLE DISEASES BILL which is now before the French Government, and which has passed its first reading before the committee, contains the following provisions: Horses, asses, cattle, sheep, goats, and swine shall at all times undergo a sanitary inspection at the cost of the importer on their arrival in France, whether this be by sea or by land. This provision may also be extended to other races of animals if there be any reason to apprehend that their introduction may lead to contagious disease. The Customs Office and ports open for the reception of cattle intended for sale shall be determined by decree. The Government may prevent the importation of, or subject to quarantine, all animals suspected of contagious disease, and all objects which are capable of conveying contagion. The Government may order the slaughter of diseased or suspected animals without giving compensation, and may take all such other measures as may be necessary to avert the fear of the introduction of disease. The sanitary measures to be undertaken will be regulated by the Mayors in the Communes, and by the police commissioner at the frontier railway station and seaports, acting in concert with the veterinary surgeons entrusted with the duty of supervision. The magistrates of sea-ports open for the entrance of cattle will arrange special landing places for them, and provide sufficient and proper building for the reception of those subjected to quarantine. These must be built to the satisfaction of the Minister for Commerce and Agriculture. To meet the cost of these proceedings the magistrates shall have power to impose special taxes on imported cattle.—*Mark Lane Express*.

PLEURO-PNEUMONIA.

IT is reported that pleuro-pneumonia continues to occur among cattle in Pennsylvania, and that the legislature has passed an act giving the Governor power to suppress the disease in any of the divisions of the State. For this purpose the Governor has power to publish the existence of disease in any part of the State, and to order the isolation of diseased animals, or to prescribe regulations for their slaughter and the disposal of their carcasses.

No animal is to be destroyed until after an examination by a competent medical or veterinary practitioner. It is reported that active steps are about to be taken under this Act, and it is expected that pleuro-pneumonia will shortly

be extinguished from the State of Pennsylvania. The districts of Savannah, Boston, and New Orleans, are reported to have remained free from contagious disease during April and May, and Charlestown and Portland are reported free for the month of May.

INSPECTION OF IMPORTED CATTLE IN CANADA.

THE Government of the Dominion of Canada has issued an Order of Council, dated Ottawa, May 25th, under the Contagious Diseases (Animals) Act, which provides, amongst other details, that the inspection of imported cattle shall be under the control of the Minister of Agriculture, and that the Collector of Customs cannot give a Bill of Clearance for cattle until shown a clean bill of health signed by the Inspector.

Facts and Observations.

THE SHEEP LOSSES IN THE WEST HIGHLANDS.—The *North British Agriculturist* states that the sheep losses in some parts of the West Highlands have been remarkably heavy. A correspondent writing from Lochalsh states that on a farm rented at £800 as many as a hundred lambs were found dead one morning, and the total losses of lambs on the farm during the season is estimated at from £400 to £500.

METALLIC SUBSTANCES IN THE STOMACHS OF COWS.—A cow, valued at about £30, died suddenly at Barrow a few days ago. In her stomach were found twenty-two pieces of nail, wire, &c. A piece of umbrella wire having penetrated the heart proved the immediate cause of the animal's death.

An extraordinary occurrence is reported from the Cheshire village of Alsager, where Mr. James Barber has suffered from a wholesale destruction of cows. In the inside of each cow a collection of metal buttons, hair-pins, shot, and other metallic substances was found, which had evidently been forced down the throats of the animals.

TYPHOID DISEASE IN PIGS.—The fine herd of prize black Berkshire pigs, the property of Mr. Seth Tinsley, Norton Grange, Malton, has been completely destroyed by the ravages of typhoid disease.

THE VETERINARIAN, JULY 1, 1879.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

BOVINE LUNG FEVER.

UNDER the heading which we quote, "Bovine Lung Fever," the *National Live Stock Journal* has a long article by Prof. James Law on the subject of pleuro-pneumonia among cattle in the United States of America. With the general account of the introduction and progress of the disease in the States we have no fault to find ; but the remarks of the writer on the subject of mediate contagion in pleuro-pneumonia appear to require some notice from us, as they refer to our own observations and experiments, as well as to those lately conducted at the Brown Institution. The writer remarks, " Years ago, Professors Simonds and Brown advanced the hypothesis that this disease could not be conveyed from animal to animal by mediate contagion, but that, in order to its transmission, the sick animal must be brought into direct contact with the healthy. It is difficult to see how such an absolute claim can be advanced in the face of the every-day observation that, when a sick animal is introduced into one end of a stable, the plague often skips many intervening ones to strike down a beast near the farthest end of the building. In such a case the air is the medium through which the virus is carried, and the contagion is unquestionably mediate."

The experiments conducted at the Brown Institution in September, 1876, March, 1877, and August, 1878, by Dr. Burdon Sanderson and Professor Duguid, in which healthy cattle were exposed to the emanations from diseased lungs without any ill result, are quoted as disproving contagion through the air. But one or several failures to convey a disease is no proof that the disease in question is not contagious. I might quote the example of the enthusiastic non-contagionists who clothed themselves with the linen fresh from the bodies of cholera patients, lay with them in the

same beds, and even drank their blood with impunity. The results did not prove that cholera was non-virulent, but only that they did not furnish the conditions necessary to induce contagion. We now know that if they had experimented with the bowel dejections of cholera patients cholera would have been produced, in all susceptible subjects, on given days after their passage.

It seems highly probable that a flaw no less serious entered into the experiments conducted at the Brown Institution. If the emanations from the lungs of a sick animal can infect a healthy cow at the farther end of a long stable, there seems no good reason to conclude that the fresh lungs, warm from the sick beast, cannot give off emanations virulent to any susceptible animal. This question of the susceptibility of the healthy animals exposed is the first that suggests itself; and in the report of Dr. Burdon Sanderson and Professor Duguid there is not a hint that this susceptibility had been tested. Had the animals that resisted exposure to the diseased lungs been afterwards infected by contact with sick cattle, the claim that the lungs could not convey the disease after their removal from the body would have been rendered much more plausible. At present, the thousand cases of the conveyance of the virus through the air of a stable must be held as more authoritative than the three negative results from the diseased lungs at the Brown Institution.

B. Contagion by Pulmonary Exudation introduced into the Nose.—Prof. Baldwin, of Glasnevin, informs me that, many years ago, he soaked a sponge in the liquid from a diseased lung and stuffed it into the nostril of a sound animal, which, in due time, showed all the symptoms of the lung fever.

c. Contagion carried by Attendants.—As this has been warmly debated on the other side of the Atlantic, I shall record two cases which ought of themselves to settle the question.

1st. In the winter of 1847-8, infected oxen were unwittingly purchased to be fed on Pitcox, East Lothian, Scotland. The disease spread through the whole herd,

causing most extensive losses. The cattle-man on the farm was the son of the farm steward on the neighbouring farm of Pleasants. The buildings on the two farms where the cattle were confined were about a mile and a half apart, and the Pitcox cattle-man came this distance weekly to pay a Sunday visit to his parents. On such visits he never failed to go in to see how his father's cow was doing. In the course of a few weeks the father's cow was noticed ailing, and from her the malady spread to all the cattle on the farm, entailing heavy losses on the owner.

2nd. In February, 1879, when we began the stamping-out of the plague on Long Island, a gentleman of the name of Ditmas Jewel took a great interest in the welfare of the suffering milkmen, and visited one or more of the worst-infected stables daily. He owned one favourite family cow, a Jersey, which was kept alone in a private stable, separated by ample grounds from all adjacent herds. She was never removed from these premises, nor were other cattle admitted, yet, towards the end of March, she sickened, and soon perished, presenting the most characteristic lung-plague lesions.

These two cases are conclusive, as in neither instance was there any possibility of direct contact with sick animals, while in both there was the mediate contact through the persons and clothes of the visitors.

D. *Contagion through the Infected Buildings.*—This form of contagion is so exceedingly common that an apology would be needed for referring to it were it not for the hardihood of some in denying all *mediate contagion*. Distillery stables, where the cattle of many owners mingle, soon become infected in infected localities, and from that time onward they remain infecting, though all sick animals are excluded. Dealers' stables suffer in a similar way; and thus, after a dealer has kept an infected animal in his place, he continues for months or years to disseminate cattle that infect others, though it may be impossible to find a sick beast on his premises at any time in the interval. One or two cases may, however, be particularised:

1st. John Miller, Farmingdale, L.I., traded with a Brooklyn dealer, January 1st, 1879, for a cow, which, soon after,

fell ill and died. He shortly after purchased another cow, and placed her in the same stable, but she also sickened and died. After this, he placed a calf in the stable, but this also perished; and at the present the stable remains unoccupied.

2nd. Mrs. P. G., 12th Street, Brooklyn, had two cows and one calf in her stable in the end of February, 1879. When visited, one cow was very sick, and her destruction was secured, the stable being afterwards washed with disinfectant liquids. The calf was disposed of for veal. Two months later, Mrs. G. purchased a new cow from a man who had kept her as a family cow for some years, and put her in the same stable in which the first had stood. Ten days afterwards she showed symptoms of disease, and, when slaughtered, showed the characteristic lesions of lung fever.

E. *Infection through the Manure.*—Mrs. P., Franklyn Avenue, Brooklyn, kept eight cows, and had made no purchase since the autumn of 1878. On March 26th, one of her cows was found to be affected with lung fever, and was killed in consequence. The only appreciable source of contagion was the manure, which had been drawn from infected city stables, and spread on a lot where these cows were turned out on fine days for exercise. In spite of the plowing under of the manure as soon as the frost would allow, three more of her cattle had sickened, and had to be killed May 12th. As further evidence of the contagious nature of the affection in this case, Mr. K., her neighbour, who had visited and handled her first sick cow, has since lost one out of his herd of eleven, with unequivocal symptoms and lesions.

We have very few comments to offer on this *evidence*, because it contains its own refutation—a mere recital of a series of unconnected events cannot be advanced as proof of anything, and in the first place we take leave to say that we never, at any time, advanced any hypothesis on the subject. Many years ago we stated that all the actual evidence relating to the progress of pleuro-pneumonia, pointed to the conclusion that the intervention of a living diseased animal is necessary for the propagation of the disease, and all the

investigations and experiments which have been carried out since that time have supported that view.

It is not necessary to inform us that a cow introduced into a shed where pleuro-pneumonia has existed, showed symptoms of disease *ten days afterwards*, because we know that the same thing has happened when cows were put into sheds where *no* disease had previously existed, but we quite object to take such ordinary events as evidence of mediate contagion, or indeed as evidence of anything but the bare fact of the existence of the disease.

We have no hypothesis to offer, but we rest on our oft-repeated proposition; take any number of absolutely healthy cattle, place them under circumstances which will render direct infection impossible, and then by any means produce the disease, and we abandon our position; until then we maintain it. The argument in favour of mediate contagion seems to be formulated thus: an outbreak occurs when no direct contact with diseased animals can be ascertained to have occurred, *ergo*, the transmission of the virus must have taken place in some mediate way; to this loose style of reasoning we say prove the possibility of such a method of infection by experiment as may be done in all other contagious diseases. The attempt to furnish this kind of proof has been made repeatedly, and always with negative results.

Extracts from British and Foreign Journals.

EVERGREENS AND FARM STOCK.

A GOOD deal has been said on the poisonous nature of yew tree clippings, and every now and again we hear of cows or horses being poisoned by munching the branches that have been carelessly thrown in their way. The *Journal of Forestry* points out that the danger is not confined to the yew tree, but that many other evergreens possess the same deadly capability when in a half-withered state. Horses, and even pigs, have been destroyed by eating the clippings of laurel and box trees. Ivy prunings have proved as fatal to sheep, and it is

said that fallow deer have occasionally been killed by being permitted to browse on the same plant, which, though apparently wholesome enough when in a fresh growing condition, appears to acquire a deleterious character when it has ceased to grow and becomes shrivelled and dry. Our contemporary has noted fourteen cases that have occurred this spring, and seems inclined to attribute the acquisition of a poisonous character to incipient fermentation. There may be something in this, perhaps, but it seems just possible that the noxious principle is contained in the juices of the living plant, and merely becomes concentrated by the drying of the branches clipped off. It seems certain that animals may eat with apparent impunity not only box and laurel, but the yew tree also when in a growing state, but it may reasonably be doubted whether they do not receive more or less injury from them, and until the matter has received a little more attention than it has done owners of farm stock would do well to look to the fences of their shrubberies and ivy growths. The question is raised as to whether clippings are as deadly at other seasons of the year as they are in spring. This is considered to be doubtful, but it is a fact that animals have been killed by prunings of the kind referred to at all seasons, and care should be taken at all times therefore, although it may be a fact that the poison may be more virulent at one time than another.—*Globe*.

SEARCHING FOR TRICHINÆ.

MR. GEORGE W. MOREHOUSE, of Wayland, N.Y., says * that it is undeniable that microscopists waste a good deal of valuable time by the use of higher powers than are necessary, and by imperfect preparation of objects for examination. In nothing in this more forcibly illustrated than in the examination of pork for trichinæ. For this purpose it is customary to use powers of 75 diameters and upwards (seldom as low as 50), and the meat is not always made sufficiently transparent for ready detection of the parasites. A power of 25 diameters, obtained with a good 2-inch objective, and 2-inch ocular, is amply sufficient. With the 2-inch we have greater depth of focus, the object is still shown with great clearness, and most important of all, we are able to do as much searching in one hour as it would take about nine hours to accomplish with a $\frac{2}{3}$ -inch objective.

As to preparing pork for present, rapid, and accurate ob-

* 'Am. Journ. Micr.,' iv. (1879) 36.

servation, he has found the following method to work well:—cut thin longitudinal sections from the extremities of muscles, and from other favourite localities where the worms, in migrating, stop in greatest abundance, and place the sections in a watch-glass, covering them with acetic acid. In a few minutes the tissues will be transparent enough to enable one to see the letters through the specimens when the watch-glass is placed on a printed page. Drain off the acid, add water and examine, or wash and transfer to a glass slip (large, with large cover, for a number of sections at once), either in water or glycerine, and cover. For permanent preservation, while the sections are still in glycerine, press them for several days between plates of glass, and mount at leisure in pure glycerine. When thus prepared, the parasites remain coloured more highly than the surrounding muscular fibres, and readily attract the eye. They are so plain, that none, when brought into the field of view, can escape instant detection. The process is simple, takes but little time, and is inexpensive.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

MONTHLY COUNCIL, Wednesday, June 4th, 1879. Present, Colonel Kingscote, C.B., M.P., Trustee, in the chair.

VETERINARY REPORT.

Colonel Kingscote, C.B., M.P., reported that there were no reports on cases investigated during the last month from the Royal Veterinary College. A letter had been received from Dr. Burdon Sanderson, informing the Committee that owing to Dr. Greenfield not having been able to obtain material for prosecuting experiments on anthrax, nothing has been carried out in this direction. The Committee recommended that the Metropolitan Board of Works be communicated with in reference to obtaining information relative to outbreaks of disease of animals in the metropolis; and that a copy of the rules and regulations guiding the examinations for prizes and medals for proficiency in cattle pathology be forwarded to the Lord Lieutenant of Ireland and the Secretary of the Highland Society, together with an explanatory letter, suggesting that the prizes should be open to students from all parts of the United Kingdom, and inviting their co-operation to carry this into effect. Professor Simonds had reported that experiments were being carried on at the Royal Veterinary College with respect to the disease which is known by the name of Trichinosis.

The report was adopted.

ROYAL COLLEGE OF VETERINARY SURGEONS.

SPECIAL MEETING OF COUNCIL, HELD MAY 27TH, 1879

Present—General Sir Frederick Fitzwygram, Bart., Professors Simonds, Brown, Pritchard, Williams, and Axe, Messrs. Anderton, Batt, Blake-way, Cartledge, Collins, Cuthbert, Fleming, Greaves, Harpley, Morgan, Proctor, Reynolds, Taylor, Whittle, and the Secretary.

General Sir Fitzwygram, Bart., having taken the Chair,

The Secretary read the notice convening the meeting.

The minutes of the previous meeting were read and confirmed.

Election of President.

General Sir Frederick Fitzwygram stated that as the next Annual Meeting would be held in Edinburgh, it was very desirable to elect some distinguished member of the profession who had been educated at a Scottish veterinary school. There were two members of the Council eligible for election, but one being a junior member, he would propose for selection Professor Williams.

Mr. Greaves seconded the motion.

Professor Axe proposed Professor McCall.

Mr. Fleming said he had authority for stating that that gentleman could not accept the office.

On the ballot being taken it was found that the votes were as follows :

| | |
|------------------------------|----|
| Professor Williams | 12 |
| Professor McCall | 5 |

Professor Williams having been declared duly elected returned thanks for the honour of his election.

Mr. Greaves proposed a vote of thanks to the late President for his untiring exertions on behalf of the veterinary profession, which was seconded by *Mr. Harpley*, and carried unanimously.

General Sir Fitzwygram returned thanks, and stated that it would always afford him pleasure in advancing the interest of the profession.

Election of Vice-Presidents.

The election of Vice-Presidents was then proceeded with.

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|-----------------------|----------------------------|
| Mr. Jas. Moon, | proposed by Mr. Cartledge. |
| Mr. E. C. Dray, | „ Professor Simonds. |
| Mr. A. H. Santy, | „ Mr. Greaves. |
| Mr. M. E. Naylor, | „ Mr. Coates. |
| Mr. F. W. Wragg, | „ Professor Pritchard |
| Mr. Geo. Williams, | „ Mr. Harpley. |
| Mr. H. J. Cartwright, | „ Mr. Taylor. |
| Mr. J. C. Broad, | „ Mr. Coates. |
| Mr. J. Roalfe Cox, | „ Mr. Blakeway. |
| Mr. J. Alfred Owles, | „ Mr. Collins. |
| Professor McCall, | „ Mr. Morgan. |
| Professor Walley, | „ Mr. Reynolds. |
| Mr. T. W. Talbott, | „ Mr. Batt. |
| Mr. W. G. Flanagan, | „ Professor Axe. |

On the ballot being taken it was found that the voting was as follows :

| | | | |
|----------------------------|----|--------------------------|---|
| Mr. H. J. Cartwright . . . | 13 | Mr. A. H. Santy . . . | 6 |
| Mr. Geo. Williams . . . | 12 | Mr. M. E. Naylor . . . | 5 |
| Mr. Jas. Moon . . . | 11 | Mr. J. R. Cox . . . | 5 |
| Professor McCall . . . | 11 | Mr. W. G. Flanagan . . . | 5 |
| Mr. E. C. Dray . . . | 10 | Mr. T. W. Talbott . . . | 4 |
| Professor Walley . . . | 8 | Mr. J. C. Broad . . . | 3 |
| Mr. A. J. Owles . . . | 8 | Mr. F. W. Wragg . . . | 3 |

There being an equal number of votes for Professor Walley and Mr. Owles, a second ballot was taken, when it was found for Professor Walley 13, Mr. Owles 8.

Messrs. Cartwright, Williams, Moon, McCall, Dray, and Walley, were therefore declared duly elected.

On the motion of *Mr. Taylor*, Mr. E. C. Dray was re-elected Treasurer.

And on the motion of *Mr. Greaves*, Mr. W. H. Coates was re-elected Secretary and Registrar.

This concluded the business of the meeting.

LIVERPOOL VETERINARY MEDICAL ASSOCIATION.

THE fifty-ninth meeting of this Association was held at the Medical Institute on May 9th, 1879.

WILLIAM WHITE, Esq., Vice-President, in the chair.

There were present—Messrs. Elam, Moore, Morgan, Wilson, Reynolds, Wm. Leather, Stevenson, and Chisnall, of Liverpool, H. Barnes, Malpas, Roughsedge, St. Helens, N. Barron, Sutton, William Woods, Wigan, Storrar, jun., Chester, and the Secretary.

Letters of apology were received from Professors Williams, Walley, Pritchard, and Axe, Messrs. Hopkins, A. and J. Lawson, G. R. Dudgeon, D. Dudgeon, A. H. Darwell, J. B. Wolstenholme, T. Taylor, Samuel Locke, H. J. Cartwright, and J. Welsby.

The minutes of the previous meeting were read and confirmed.

Mr. Wm. Leather then exhibited the brains of a horse, of which he gave the following description :—

The subject was a grey cart gelding, eight years of age, in moderate condition; had been at work in Liverpool about twelve months. He was at his usual work on the 22nd of last December, and was brought to our infirmary on the 23rd.

Symptoms.—Pulse 50, of medium strength, respiration normal, temp. 103° F.; a swelling in the right orbit, which completely closed the eye. The left eye was natural. On approaching him from the right side he would turn away, as if afraid of its being touched. I carefully examined for some external mark, but failed to discover any. His appetite was moderately good.

24th.—Symptoms unaltered.

25th.—I observed a discharge of a thick foetid character from his right nostril. There was also an increased secretion of saliva, which is seen to accompany sore throat, but he evinced no difficulty in swallowing.

26th.—Pulse 62, and weaker; temp. 104° F.; appetite diminished.

27th.—Pulse and temperature unaltered; but on being approached from either side he would suddenly wheel round, and appear unsteady for a few minutes; the discharge from the nostril had ceased.

28th.—Pulse 45, temp. 103° F.; unsteadiness increased; could be made to move with difficulty; could eat carrots and green food when handed to him.

29th.—Pulse 45, temp. 103° F.; extreme weakness. He fell down in the afternoon, and died the same night.

Post-mortem.—The thoracic and abdominal viscera were healthy. On removing the surrounding tissues of the right orbit and reaching the parts adjacent to the orbital and maxillary hiati, they presented a greenish colour, mixed with foetid pus; the divisions of the fifth pair or trifacial nerves which pass through the foramina of the hiati, were also extensively diseased. On dissecting out the brain, I found it highly congested, and an abscess containing about two ounces of pus, situated on the right side and at the base of the cerebrum, at its junction with the cerebellum.

In reply to a question, he said that the pus was not contained in a sac, nor had the animal any appearance of strangles.

A conversational discussion followed, in which most of the members present joined, the principal points touched upon being the origin of the abscess, whether it was caused by an external injury, the result of extravasated blood, or related to strangles.

Mr. Barnes then communicated the notes of a case of disease of the brain of a horse.

The subject was a cart gelding. At three years of age he was put to light work, gave every satisfaction, but always evinced a dislike to have his head touched. He was turned out to grass the following summer (1878), and a few weeks afterwards he was observed to have a difficulty in lowering his head to the ground, and to be falling away in condition. I was then requested to see him, and on examination I found a large, hard, fluctuating swelling on the off side of the pole. After the application of hot fomentations and a blister for nearly a week, I lanced it, and gave exit to a large quantity of pus; and on further examining the wound, I found it deep-seated, and the tissues involved completely destroyed. I had the wound well syringed out and dressed daily, under which treatment it continued to improve, and was discharged in October, a very slight discharge still issuing from the wound, but which I anticipated would gradually cease.

On the 30th January, 1879, he was put to draw a load of corn to the railway station, a distance of two miles; but when about half the journey had been completed he was observed to stagger, and immediately began to perspire freely. After standing for a few minutes, however, he apparently recovered, and proceeded with the load, completing the journey, although manifesting signs of drowsiness and disinclination to travel. On arriving home his owner observed him to be very stiff in turning, hanging his head and appearing sleepy. He then administered a stimulant, consisting of a quart of warm ale and a little ginger, and afterwards gave him a dose of physic. There appeared little improvement, and three days later I was requested to see him.

I found him with his nose in the manger, and his head pressed against the rack; eyelids semi-closed, lips pendulous, pulse and respirations slow, and partial paralysis of the whole body. On elevating his head for the purpose of giving him a draught he became greatly excited, reeled, and fell backwards.

Treatment.—I abstracted about five to six quarts of blood, administered a dose of physic, placed him in a comfortable loose box, clothed his body well, and ordered cold cloths to be applied to his head constantly.

The following day the bowels were relaxed, but the animal was uncon-

scious, holding his head to the right side, and turning round in the same direction.

He remained in this condition for five days, and on the sixth he was found down, struggling violently, and steaming with perspiration. I advised the owner to have him destroyed.

Post mortem.—I found the right hemisphere of the cerebrum enlarged, containing about two ounces of pus. In reply to a question, he said that the abscess was not in the substance of the brain, nor did it appear to be contained in a sac.

Mr. Barnes then exhibited a specimen of otitis, with a deposit of new bony matter, on the sixth and seventh cervical vertebræ, of which the following are the notes.

The subject was a grey mare, five years old. I was called to examine her on the 8th of February. I found her lame in the off fore leg, accompanied with atrophy of the antea and postea spinati muscles of the lame shoulder, which I concluded was the result of a sprain.

Treatment.—Rest, hot fomentations, followed by gentle stimulation, which was continued for a fortnight with satisfactory results. The following week she fell off her food, and showed signs of stiffness in the neck, accompanied with general wasting of the cervical muscles. On manipulating the inferior portion of the cervical vertebræ the animal evinced great pain.

I ordered hot fomentations and stimulating embrocation to be applied daily, accompanied with the internal administration of vegetable tonics.

This treatment I continued for a fortnight with no beneficial results, when I informed the owner that I anticipated an unfavorable result, and asked to be allowed to have a professional gentleman in consultation. Mr. Cartwright, of Wolverhampton, was called in on the 4th of March, and, after a careful examination together, we came to the conclusion that the atrophy of the muscles was the result of concussion to the cervical vertebræ.

On inquiry we ascertained that about a month previous to my first visit she had broken loose whilst out at exercise, and was supposed to have leaped or fallen over some iron hurdles.

A fresh sheepskin was applied to the neck for twenty-four hours, after which a strong embrocation was rubbed over the whole of the neck, and vegetable and mineral tonics were given internally, but with no improvement. On the 26th of March she was found down, and unable to rise. The following day I recommended her to be killed.

Post mortem.—On stripping the skin from the neck I observed the muscles of the inferior cervical region to be of a peculiar greenish colour, and on cutting down to the bone a small quantity of a greenish-looking pus made its appearance, which convinced me that extensive disease of the bone was present. On examining the two vertebræ involved you find that the deposit of bony matter extends within the neural canal, as well as upon the outer surface of the bones. And he (Mr. Barnes) would like the opinion of the members on the following peculiarities of this case, viz.:—1. The length of time between the supposed cause of the injury and the first symptoms of lameness. 2. Why was there not immediate stiffness of the neck with excessive pain? And 3. Why should the muscles of the shoulder be the first to become atrophied?

An interesting discussion followed, and the general opinion expressed was that the original cause of the diseased condition had been a shock inflicted on the bones of the neck, setting up inflammatory action, and as this inflammation, from the appearance of the deposit, seemed to have com-

menced within the neural canal, and to have extended outwards, it was considered that the nerves distributed to the shoulder had become involved in the diseased condition previously to its being so extensive as to affect the contiguous muscles of the part, thus accounting for the interval between the injury and the shoulder lameness, and also why the shoulder lameness preceded the stiffness in the neck itself.

Mr. Elam then exhibited the top of a large iron rail weighing several pounds, which he had extracted from the abdominal cavity of a cow, of which the following are the notes:—The cow, in trying to leap over the railing, got empaed on the top of one, and the parties in attendance, being unable to get her off, procured a hammer and broke off the head of the rail, leaving it enclosed in the abdominal cavity. I was not made aware of this on my arrival to attend the cow, and not until I had carefully returned the bowels, which protruded, and stitched up the wound, was I told that there was a lump of iron inside.

I then undid the stitches, and by careful manipulation succeeded in extracting this massive cone-shaped rail head which you see. It fortunately had a very obtuse apex, and consequently had not penetrated the bowels. I then restitched the wound, fastened a truss on the part, kept the animal quiet, gave sloppy diet, a little aconite to allay the excitement during the early stages. In about a week a small abscess formed, which I opened, and in three weeks the cow was well.

Mr. Elam also exhibited a specimen of *mollities ossium* in a five-year-old pony. The part shown was the head, but the whole of the bones of the body were similarly affected. The pony was the property of *Mr. Hengler*, and had been used by him in the circus for carrying performing monkeys, but he did not know anything further concerning its previous history.

A discussion as to the cause and pathology of this diseased condition followed, but no very definite conclusion was arrived at.

A vote of thanks to Messrs. Leather, Barnes, and Elam for their contributions was carried unanimously.

The *Secretary* nominated *Mr. T. E. J. Lloyd*, Liverpool, for election as a member of the Association.

A vote of thanks to the Vice-President terminated the meeting.

DUNCAN HUTCHEON, *Hon. Sec.*

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

THE usual quarterly meeting of the above Association was held at the Blackfriars Hotel, Manchester, on Wednesday evening, April 9th, 1879. *W. A. Taylor, Esq.*, Vice-President, in the chair, in the absence of the President, *W. Dacre, Esq.*, who was unable to attend in consequence of severe indisposition. The following persons were present—Messrs. *P. Taylor, W. A. Taylor, T. Hopkin, E. Faulkner, M. J. Roberts, J. B. Wolstenholme, J. Paton*, of Manchester, Messrs. *R. Reynolds* and *Dr. Hutcheon*, of Liverpool, *J. B. Taylor*, of Ashton, *Bunnell*, of Oldham, *W. Woods*, Wigan, *W. Whittle*, of Worsley, *A. Darwell*, of Northwich, *H. Bean*, of Macclesfield, — *Pallin, Esq.*, 20th Hussars, *T. Brigg*, of Bury, *Dr. Henry Briggs*, of Liverpool, and the Secretary.

Letters of excuse were received from Professors *Pritchard* and *McCall*,

Messrs. J. Welsby, E. Sudren, Geo. Morgan, J. O. Martin, C. E. Elam, E. Woolner, and W. Dacre.

The minutes of the last meeting were read and confirmed, after which Mr. P. Taylor proposed for election as a member of the Association Mr. J. B. Wolstenholme, of Manchester, seconded by Mr. S. Locke, and carried unanimously. Mr. Whittle proposed Mr. J. O. Martin, of Manchester, seconded by Mr. P. Taylor, and carried unanimously. Mr. Woods proposed Mr. H. Thompson, of Aspatria, Cumberland, as a member, seconded by Mr. W. A. Taylor, and carried unanimously. Mr. Shocke proposed Mr. J. H. Ridler, The Mall, London, which was seconded by Mr. W. A. Taylor, and carried unanimously.

The *Secretary* then read the report of the Fleming Testimonial Committee. There were twenty-nine subscribers, the total amount subscribed being £68 10s. 6d.

Mr. T. Hopkin next read an interesting paper on "Antisepticity." He said—Gentlemen, we have latterly been so favoured with lectures and papers from professors and others learned in our art that when one of the multitude takes the place of essayist, unless he is possessed of unlimited amount of assurance, must feel no little trepidation.

This vaunted 19th century of electricity and accelerated locomotion has divided and subdivided all branches of science in such a manner that the general practitioner finds it no light task to master the new theories and facts that scientific specialists are from day to day supplying him with, and engaged as we are with the multifarious duties of our active calling, it cannot be expected that we should undertake the solution of abstract problems, but after the specialist has by careful research and experiment ascertained certain facts tending to unravel the laws of nature, that have up to that time been mysterious and secret, it is clearly a part of our duty to apply them in such a manner that an enhanced success should follow their adaptation, and thus be able to advance our profession by battling more successfully with disease and its sequels. The object of this paper will be to call your attention to investigations that have been latterly directed to the way in which "Antisepticity" may be successfully applied to surgery. It will be taken for granted that the old ideas of our forefathers, that all they required was a certain number of receipts or nostrums to be applied in a case as the best or only thing requisite for the successful practising of our profession, has exploded, and that any light thrown on the working of nature's laws, any unveiling of her mysteries, will be received as priceless knowledge, such knowledge being power.

If we take as an example the discovery of the circulation of the blood by Harvey, and contemplate the amount of labour that must necessarily have attended the experiments, the painstaking research, the careful noting of facts, that discovery entailed on the memorable and honoured discoverer, and, on the other hand, the boon it has been to mankind, you will see that Harvey did a work of far greater magnitude than a generation of ordinary practitioners. His discovery must remain a monument to him for ages, whilst the others glide away with scarce moments left to mark their existence. To the most casual observer the intimate relation existing between cause and effect must be patent in thousands of ways, but modern science with her appliances, teaching as it does the infinity of the infinitely little, requires both perseverance and intellect to follow her. A man may fracture a limb by falling; be he possessed of the slightest power of reason he will easily recognise the fact that the fall was the cause and the fracture the result, but it will require the educated scientist to recognise the causes and effects of many of the complicated processes that will have to come into operation before it terminates in

resolution, or one or other of the more unfortunate terminations following the solution of continuity in the osseous system ; and whilst the intimate relation existing between cause and effect can be ascertained and demonstrated by experimental research in branches of science dealing with the inanimate, there are some facts in connection with ours that humanity forbids the same prodigality of experiment, and whilst some amount of vivisection is undoubtedly justifiable, we forget that any new facts now proven in the daily clinic is a step towards the solution of some mystery, and it is to be feared that often when we stumble across those gems, by not noting them they drift back into the dark sea of the unknown.

Abundant proof is to hand that for centuries man has been aware of the fact that certain diseases could be conveyed from one system to another in some mysterious way, but without the slightest idea, save and except such as they obtained by conjecture, as to what this potent but baneful agent could be that carried death and disease over the land. During the last twenty years Pasteur's researches with regard to the process of fermentation and putrefaction have given rise to what is commonly known as the germ theory of disease. It is not necessary to discuss the question *in extenso* as to whether all our infectious diseases are due to germs, but I wish you to note carefully the similarity in the action of fermentation and some diseases. This is beautifully illustrated by experiments conducted by Dr. Roberts, of Manchester. In one he filled two pint bottles with saccharine wine, and inserted a delicate thermometer in each. A was inoculated with a minute quantity of yeast, but nothing was added to B. Both bottles were placed in a warm room, 70° F. In order to get a correct standard for temperature another bottle (C) with thermometer was placed besides them. The bottles were carefully swathed in cotton wadding to obviate the change in temperature as much as possible. For twelve hours no change took place, but at the end of this time A began to ferment with rise of temperature. On the second day it was actively fermenting, and its temperature was 2.7° above B and C. This disturbance continued for five days, the temperature ranging from 2° to 3° above the companion bottles. The disturbance then subsided and the temperature fell to an equality with B and C, and the sediment of yeast settled at the bottom. In the meanwhile B showed little alteration, but fermentation set in on the sixth day, following a similar course to A. Dr. Roberts says this fever in a bottle resembled smallpox in the following points :—Inoculation period, incubation, disturbance and elevation of temperature, succeeded by a subsidence of the disturbance, and a return to the normal state. Multiplication of infective material, and after conclusion liquid protected from infection by same contagium. Second part shows fermentation can be produced either by direct inoculation or fortuitous infection through the atmosphere. The comparison fails, however, in one point ; a chemical change takes place in one and not the other. Sugar is changed into alcohol and carbonic acid ; whilst, so far as we know, no chemical change takes place in the blood and tissues in smallpox. Putrefaction and certain diseased action are even more intimately allied than fermentation and fever. I have in this bottle a small aquarium of my own cultivating ; A piece of fresh muscle was placed in a jar, and after being covered with water it is allowed to stand exposed in a warm atmosphere for several days. Upon examining a drop of this liquid under the microscope I find that there are thousands of living moving specks visible ; these are termed "Bacteria." We have here induced the process of putrefaction, one of the essentials to which is the presence of Bacteria. You say how

do we know that? Because it can easily be proved that if you can prevent Bacteria or their germs entering the liquid no putrefaction takes place. I have here two tubes, which after filling with wine, we boiled so as to kill any Bacteria there may be in them, and then cover one with cotton wool and leaving the other exposed; placing them in a suitable temperature you will find that the one in which the air that comes in contact with it has been filtered through cotton wool no change has taken place; in the other the process of putrefaction is going on. And, as must be patent to any one examining them, this proves several things:—Firstly. That the organic matter has no inherent power of generating Bacteria. Secondly. Matter has no inherent power of passing into decomposition. Thirdly. That Bacteria are the actual agents of decomposition. Many far more elaborate and conclusive experiments have been performed to prove these facts, but I will only just briefly allude to them. Turnip water: two specimens that were kept for over two years. Ozone was passed through one and the air filtered; it remained *statu quo*, whilst the other was green, thick, and very offensive. Professor Tyndall has proved that air optically pure will not produce Bacteria. When a ray of sun or other concentrated light is passed through a bottle containing filtered air nothing is visible, whilst the ordinary atmosphere contains particles of dust, which reflect the light and give a beautiful luminous track. I say Professor Tyndall has proved that when air is in this state organic matter does not putrefy, but only introduce a drop of water, or anything that has been in contact with the atmosphere, and the processes commences at once. You who have seen what minute things Bacteria are, will at once conclude how difficult it is to detect the germs that produce them. What has already been said pretty clearly proves that they are due to germs, and not to spontaneous origin. Two facts, however, come to light that almost upset this. The first is that Bacteria are invariably killed when exposed to a temperature of 140° F. or any higher temperature. The other fact is that certain liquids, as neutralised hay infusion and milk, often produce Bacteria after being boiled, sometimes after several hours' boiling, and where there was no possibility of subsequent injection. This looked like spontaneous generation. Professor Colin, of Breslau, has, however, thrown some light on this mystery. He found that while 140° F. might kill the parent, the germ or spore was not affected by a very much higher temperature. Mr. Dollinger and Dr. Drysdale have also demonstrated that whilst certain living Monads were killed at 140° F., the spores, which are so minute that they cannot be detected by the highest power of the microscope, except in masses, are capable of germinating after being subjected to a heat of 300° F. for ten minutes. One of these experimentalists most graphically describes the minuteness of these objects. He says they cannot be so called, for an object is a thing of which we can take cognisance by some of our senses aided or unaided, and that germs lie so completely beyond the powers of our present instruments that their existence is for the present matter of inference not of direct observation. Although at present beyond our ken, we can say, "by their fruits ye shall know them." For the purpose I have in view it will be necessary for me to prove the connection between Bacteria and a septic state of the system as seen in septicæmia, to which I shall refer presently. Burdon Sanderson after killing healthy rabbits immediately took some internal organ, as liver or kidney, and plunged it in fused paraffin at 230° F., and after allowing the mass to solidify covered it with Venice turpentine, to prevent any air getting to it through the cracks that were apt to form in its cooling. After several days, on cutting into it the outer portions

were cooked with the hot oil, or paraffin temperature had been sufficient to coagulate albumen, but an internal kernel was red, proving that the temperature here had not been sufficient to coagulate albumen; and upon examination was found to swarm with fine active Bacteria, and the conclusion he is forced to is that either Bacteria or germs were present in the organ, and that whilst it was healthy. The blood of animals, when due care is taken in extracting it so as not to permit of its being infected from without, does not normally contain either Bacteria or their germs. That they can readily enter the animal system by mucous membrane of bowels, lacteals, and pulmonary mucous membrane there is no doubt; after elaborately arguing the matter he comes to the conclusion either that the Bacteria are formed and are immediately afterwards destroyed, or that they are not allowed to germinate. Whilst we have abundant proof, on the one hand, that the normal blood does not contain Bacteria, we have also proof, on the other hand, that in peritoneal and pleural effusions in rodents, however produced, it invariably happens that the exudation liquids contain swarms of Bacteria. By the term septicæmia is meant the aggregate of the effects which are produced in the animal organism when putrid matter is mixed with the blood stream. Artificially this can be readily produced in the dog, and is analogous in the course it runs and the symptoms to which it gives rise to the fatal septicæmia of our hospitals, commonly called hospital fever. There are many reasons why our patients do not suffer so frequently from this disorder as man. But that it has been the cause of death (although overlooked at the time) to numbers of our patients I shall be able to prove clearly, I believe, before the close. Dr. Burdon Sanderson in one of his lectures "On the Infective Processes of Disease," speaking of septicæmia, says:—"Inasmuch as we cannot be certain in any case of clinical septicæmia that the symptoms or *post-mortem* results are exclusively due to septic contamination, it is clearly necessary to take the experimental facts rather than the clinical as our starting point. After detailing many of the experiments on this subject by continental authorities, he takes the symptoms as exhibited by a dog after septic matter has been injected, and compares them with the symptoms as found in this disease in man. Shows the analogy of these and *post-mortem* appearances as well. He then goes on and proves clearly that although septic matter does not necessarily contain Bacteria, *yet it cannot be produced without their agency*. His reasons for coming to this conclusion are best given in his own words." So far as our present knowledge reaches none of the known chemical products of the putrefactive disintegration of albuminous compounds can be indicated as the cause of the toxic action of putrid infusions; for in respect to each of them we have experimental evidence that, when separately introduced into the organism in such quantity as would correspond to a poisonous condition of the septic liquid, of which it is a constituent, it produces no toxic effect whatever. The inference is, therefore, suggested that the poison is not any product of the septic disintegration of proteid bodies, but a something which is much more intimately associated than any of them are with the existence and growth of the ferment-organisms themselves. This inference has been fully justified by experiment. It has been shown by Professor Bergmann that the septic poison can be produced by the action of Bacteria on material which contains no albuminous compound. He found—and we are now familiar with the fact by repeated experiments—that if you grow Bacteria in the cultivating liquid to which I previously referred, of which the composition is given in the table, the first crop of Bacteria are inert; but eventually you obtain a product which possesses

all the virulence of putrescent animal or vegetable infusions, notwithstanding that the original liquid contained only sugar ammoniac tartrate and certain inorganic salts. Let us endeavour to realise what happens. We have to begin with virtually a solution of ammoniac tartrate; for it can be shown that it is all that is wanted at the outset. Into that solution you introduce at one side, say a bit of glass, which has not been calcined, and of which the surface is consequently contaminated, *i. e.* beset with germinative particles. The vegetation takes its start from the surface of the glass. One after another Bacteria emerge into existence and visibility, and multiply with a rapidity which you can easily calculate on the datum that each comes to perfection within about an hour after its birth.

Having our bacterium, how does it manufacture its virus? In order to obtain an answer to this question, I will ask your attention to the following experimental results, which, irrespectively of their bearing on the present question, are of value for the additional evidence they afford of the fundamental proposition of this lecture, *viz.* that septicæmia is not due to the direct action of living Bacteria on the blood and tissues.

Some years ago Dr. Hiller, one of the most energetic and able of the opponents of the germ theory, made an experiment which has been the subject of much discussion. Having succeeded in collecting a considerable mass of bacterial material, that is, of Bacteria obtained from various fluids in advanced putrefaction, on a filter, he washed the mass, just as one washes a precipitate a great number of times, and injected it in repeated doses into the circulating blood of animals. The injections were entirely without effect. Hiller next proceeded to inoculate himself with the same material, and again without effect. The advocates of Bacteria at once objected to Hiller's experiment, that the Bacteria, not being accustomed to distilled water, were so injured by the repeated washings that they had lost their activity. The criticism, however, might just as well have been spared; for it afforded Hiller the opportunity of proving, by experiment, which was, of course, easy enough, that the washed Bacteria were as lively and as capable of development as ever.

But there is another way in which inactive bacterial liquids can be prepared; a way to which I have already adverted. In any cultivation of Bacteria in a nutrient solution, the first crop (if I may use the expression) is always inert. It is not until the Bacteria have gone on for many days dividing and dividing that they begin to develop their poisonous properties, at all events in appreciable quantity. This can scarcely mean anything else than that the mode of vegetation changes, *viz.* that the Bacteria first formed have their place taken by others, of which the form and the physiological endowments are different. Every one who is familiar with the growth of Bacteria in cultivating liquids, knows that there is a marked difference in appearance between the first and subsequent growths, the former consisting mostly of rods (Bacteria proper) which appear early, the latter of spheroids or micrococci. They differ not only in form, but also in the fact that whereas the rods are endowed with great mobility and appear to act independently, as if each had a consciousness of its own; the latter are held together in masses by transparent interstitial substance (*glæa*) and usually form a scum or pellicle on the surface of the liquid. The meaning of these facts seems to be this. It is obvious that in every liquid in which successive generations of organisms grow in the way I have described, each generation must alter the composition of the liquid; and that this change may consist not merely in the discharge into the liquid from the bodies of such organisms of the "waste products" of their vital processes, but also

(in case any of the earlier generations, instead of continuing to live, are disintegrated) of the products of such disintegration; so that in the latter case it is quite possible that a liquid which was at first non-albuminous may, as the process goes on, contain an appreciable quantity of proteid matter. That any such formation of plasma actually takes place cannot be asserted. All that we know on observation is, that the latter generations differ, as regards their morphological characteristics, from the earlier, and that they alone possess toxic properties, so that two processes must go on side by side; a change in the composition of the liquid, and a corresponding change of the organisms which grow in it.

Experiment has proved that if the exudation of simple peritonitis be injected fresh into the peritoneum of another animal the disease assumes a more intense form in the second than the first; and if, by artificial selection, the most severe cases be taken and the exudate from that case be used for further transmission, a still more intense inflammation will be the result. When either nature or circumstances causes this course to be followed, we get what may be termed "malignant" peritonitis. It will readily be seen, from what has already been stated, that when you have a number of cases in which the process of putrefaction is in operation, that you will be likely to get the formation of "*septic*" matter. Now, do we find this to be the case? The answer to this query must be in the affirmative. We know perfectly well that the high rate of mortality in the surgical hospitals is produced by septicæmia, and the army surgeons tell us in their records of practice, during active service, that the thing most to be dreaded is septicæmia—a greater percentage of the wounded dying from this rather than from the severity of their wounds, and that if once established, nothing could be more disastrous. Why our patients do not suffer to the same extent may be attributed to several causes. Those of you possessing a knowledge of comparative pathology will bear me out when I state there is not the same tendency of septicæmia in herbivorous animals as the omnivorous and carnivorous. Experiments prove that in some liquids Bacteria do not thrive as well as others, nor produce the septic poison; but whether the septic matter is not so abundantly formed, or whether, when formed, circumstances do not favour its absorption in the majority of our cases, we have not absolute proof; but there is indirect proof sufficient, I feel satisfied, to lead us to conclude that both these surmises are correct. We know that the discharges, many of them, swarm with Bacteria; but there does not appear to be the septic poison, or at any rate its toxic effects are not made visible either from absence or non-absorption.

The air confined in the beds impregnated with exhalations from the body and heated by the same means undoubtedly furnishes an atmosphere remarkably genial for the growth of Bacteria and their specific products. Secondly, to produce septicæmia, there must be absorption of the septic poison, and many of the wounds in our cases are more exposed to the atmosphere which must have a tendency to prevent absorption, and they are, as a rule, more isolated. We have seen that Bacteria are, under some circumstances, inert; as, for example, in the circulation; then they are in a soil that does not favour their growth. And when, so far as we can judge, they do not produce their septic effect, whilst the *Bacillus anthracis* of splenic fever find it a most genial and fruitful home. Again, the process of putrefaction is in abeyance at a low temperature, and the wounds in our patients are not, as a rule, in so warm an atmosphere as those of man, and more ample exit afforded for any discharge; but independently of septicæmia wounds, in which the process of putrefaction is at work, do not heal well. Even if the septic poison be not

absorbed, and we have not its toxic effects to rob us of our patients, we have its retarding influences. The way in which wounds were supposed to heal will be familiar to you all, and the desire to be able so to treat them, that there should be no putrefactive suppuration, has led to the search after what is now generally known as the anti-septic method.

The physiological meaning of antiseptic is anything "that destroys or annuls the physiological properties of septic organisms or their germs."

Many methods have been tried. The chemist, physiologist, and pathologist, by their united labours, have given us a long list of drugs and other agents which are antagonistic to the life of Bacteria and septic germs, among which we find chlorine 1 in 100,000, permanganate of iron 1 in 10,000, and salicylic acid 1 in 100, high temperature, and most of the essential oils. After the discovery of these there was still another difficulty to overcome, how to apply them in surgery in such a manner that they should, whilst not interfering with the healing process, still prevent, or if present, destroy the agents which produce putrefaction. Associated with this subject must now and always stand the name of Professor Lister. He has very kindly sent me a pamphlet containing the latest and most improved *modus operandi* of his method of applying his antisepticism to surgery. I shall, as briefly as possible, detail it to you, and after glancing at some of the marvellous results achieved by the use of it in human surgery, call your attention to the cases in our practice in which antisepticity, as now practised, or in some other form, may prove advantageous. What it is doing for Ovariectomy. It was my privilege last month to see the operation of Ovariectomy performed by one of our local surgeons. The cyst weighed 56 pounds; and contained several gallons of fluid. It was a most hopeless case; and although the poor woman died in rather less than a fortnight after the operation, there is good reason to believe that if the operation had not been delayed so long it would have had a happier termination. This operation was suggested by Morgagni in 1761, performed in America by Mr. Dowel in 1809, and successfully by an Italian surgeon in 1815, the woman bearing several children after it, five single and twins. The after-treatment consisted of rigid diet, bleeding next day, tartar emetic, and lemonade, showing some cases will recover any way, *vis medicatrix*. In 1850, Laurance writing about it, said the mortality was so great that he doubted if it would not endanger the character of the profession if it was continued. In less than twenty-five years after this Lord Selburne calculated that Spencer Wells, by his 500 successful cases 10,000 years would be added to the lives of European women.

In reviewing twenty years' work at the Samaritan Hospital, S. Wells says that in 1855 he went out to the Crimea, returning in 1856. In 1858 he attempted his second case on a poor woman from the workhouse hospital, which was successful, and the last he heard of her was that, thanks to his operation, instead of her dying a pauper in the workhouse, she was well, and married to a man with a salary of £240 per annum. The last two years he operated on sixty-eight cases, with sixty-one recoveries and only seven deaths, whilst in earlier years one in three died. He then goes on to speak of the antiseptic method, in which he hopes for great things for the future. Dr. Marion Sims, an American surgeon of note, who has been here on a professional tour, reports that eleven cases in which he saw the operation performed in a fortnight *à la* Lister all did well, and expressed himself enthusiastically as to the merits of a method which robs the most serious of surgical procedures of all extraneous perils to life.

A method that enables the surgeon to lay open the abdominal cavity, break down adhesions existing between the ovarian sac, abdominal walls, bowels, omentum, and uterus, secure with ligature bleeding vessels, and by means of sponges remove from these organs and cavity all blood, serum, and other foreign matter, without producing "*septic peritonitis*," is, to say the least of it, a mighty triumph for modern antiseptic surgery.

Professor Lister, on hearing from Professor Tyndall about air optically pure, tied a piece of cotton wool to the nozzle of a pair of bellows, and on examining the current of air after passing through the wool, and, finding it free from organisms or particles, he determined to try cotton wool as a dressing. It answered very well until the discharge soaked through, when putrefaction occurred throughout the entire mass of the moistened part down to the wound, even within twenty-four hours. It is only when dry that cotton wool can arrest the progress of microscopic organisms, which have ample room to develop among its meshes when filled with a putrescible liquid. This proves that pus, blood, and dead tissues do not putrefy through the influence of atmospheric gases, but through the particles of dust, which may be prevented entering a wound by filtering the air, or destroying them by means of an antiseptic agent. Professor Lister's method of procedure in his antiseptic treatment is to wash with carbolic water, 1 to 40, all instruments, sponges, operator's hands, and the part to be operated upon. He next produces a spray (composed of water containing the acid in proportion 1 to 40), with which he envelopes the operation. In case of the spray failing him, he has what he terms a guard—a cloth soaked in carbolic-acid water, with which he covers it until such times as the spray apparatus is again brought into play. Any arteries that may require ligaturing he uses the carbolised catgut, which possesses the advantage of not acting as a foreign body; being an animal substance it is absorbed. It was universally believed, and is still by many, that when you ligature any internal structure, as a blood-vessel, that sloughing of the distal portion must ensue, but latterly it has been proved by practice, by direct experiments, and by *post-mortem* examination, that if the ligature be cut off short, and guarded against the *putrefactive process*, such a result is almost unknown; skein of four threads absorbed in a week; skein of twelve threads in from ten to twelve days. Assuming the operation to be completed, the wound is wrapped in seven or eight folds of antiseptic gauze, being a loose cotton fabric, the fibres of which are impregnated with carbolic acid, securely lodged in insoluble resin, to prevent it losing its antiseptic properties; over this is placed a layer or covering of hat lining. Carbolic acid itself does not assist the healing of a wound; and in wounds treated in this way there is a copious serous discharge, which is removed by means of an antiseptic india-rubber drainage tube or some threads of the catgut, which are left protruding in a dependent part.

In his record of cases thus treated he mentions a case of psoas abscess in a man aged twenty-seven, who, from the age of eleven, had had antero-posterior curvature of the spine, and that he evacuated between fifty and sixty ounces of thick pus, with lumps of curdy material, and several spiculæ of cancellated bone. The dressing was changed every four or five days, when the serous discharge became slighter. He is now perfectly recovered and a healthy man. This is only one of several, whilst under the ordinary treatment they are generally followed by hectic or irritant fever and death. For operating in aneurism and hernia it reduces the risk to a minimum, whilst joints and synovial sacs and bursæ can be opened with impunity.

Paracentesis thoracis.—In this it is the only method that will justify the surgeon or veterinary surgeon's undertaking the operation. So much for Professor Lister's antiseptic surgery. I will now, gentlemen, if I have not already trespassed too long on your time and patience, try and show you how a modified antiseptic treatment may be adopted with advantage in our practice. Wounds, injuries, and operations that are followed by certain diseases will depend in a great measure upon the state of the system at the time of their infliction, the surrounding circumstances, and the parts affected. We will first consider *castration* in the horse, which is perhaps the operation, of all others, most liable to be followed by *peritonitic septicæmia*. So far as I am aware, this fact has not been published or noted, and it is from personal observation that I have come to this conclusion. Perhaps there is not a member of our profession who has castrated any number of horses that has not been made uncomfortable by witnessing the painful symptoms exhibited by some unfortunate beast which is suffering from peritonitis, as a sequel of the operation he performed some few days previous. Bacteria have undoubtedly a preference for exudates from serous membranes. In these they rapidly multiply and produce their septic properties. It is not often, excepting in castration, that a serous surface and exudate is prepared for their reception in our patients, but, whenever it is, the veterinarian may not only expect their presence, but their toxic effects, if they or their germs are within reach of it. Practical lessons are, as a rule, those which speak most forcibly to us; and since I have been studying this subject, one that occurred to me some twelve or thirteen years back has become plainer, and will serve as a good illustration and proof of my argument at the same time. During the early part of my pupilage it was my misfortune to cause the death of three out of four calves that I performed the operation of castration upon, with a knife that had been used some days before whilst helping to make a *post-mortem* examination. As I was only young and inexperienced, the farmer very kindly put it down to that, and, after some little blustering and rather strong language, the matter was, fortunately for me, allowed quietly to subside. The real cause would have remained a mystery had not my old tutor—Mr. Schofield, of Pontefract—shortly afterwards seen me using again my castrating knife to cut some decomposing animal tissue. He knew the practical fact that to castrate an animal with an impure knife was followed by death. We now know that if we inoculate an animal with septic matter whilst performing the operation of castration that it will be followed by *septicæmic peritonitis*, as in the cases just recorded. There was another fact demonstrated, that the severity of the disease depends on the amount and quality of the inoculation. The first calf operated upon was the most rapidly fatal case, whilst the last done was not fatal, and the last but one lingered for some time before succumbing.

That septicæmic peritonitis may follow when pure instruments are used will be best shown by relating to you another case that came under my notice a few years back. I operated on a three-year old colt belonging to a tanner, and stabled in a box near the tan yard. All went well for some time, excepting that there was scirrhus of one cord. This was removed in the ordinary way, but was followed by septicæmic peritonitis and death.

That it is not caused by carelessness in operating, as the public generally suppose, will be proved by the fact that Professor Williams told me every colt operated on and kept in proximity to a dissecting room died; and when we were students would not operate on a colt in the College premises. On account of this we can readily trace the cause of infection

in all these cases—(1) by the knife in the calves, (2) from the tan yard in the case of the three-year old colt, (3) from the dissecting room. In these cases remove the cause, and I should myself try some antiseptic treatment when suspected.

Professor Chauveau has also demonstrated another fact in connection with operations and state of the system. In the operation of "bistour-nage," which consists in twisting the spermatic cord, without making any external wound, in such a way that the circulation is permanently stopped; and of the thousands of operations of this sort which are performed annually on the Continent none are ever followed by infective consequences. But when he introduced a dose of septic matter with the blood stream, the textures around the organ became the seat of acute diffuse inflammation, which soon extended to adjoining parts, and in some cases terminated fatally, depending on the amount of septic matter introduced.

The immediate cause of the septic inflammation of the testicle was evidently the injury to which it had been subjected, but no infective process would have developed itself had it not been that masses of septic matter were at the time of the injury circulating in the blood stream, some of which were conveyed to the injured parts, and then became centres of infective action. On the other hand, the constitutional effects which were produced by the injection of the septic liquid into the blood would have passed off without endangering the life of the animal if there had been no injured organ to afford the necessary conditions for the development of a septic focus. Predisposition as well as state of system will, no doubt, as before stated play a part, because wounds do heal without septicæmia when exposed to what in another case proves a source of infection. Parturient peritonitis and metritis illustrate this. Mares being most prone to absorb septic matter after parturition, whilst cows are the reverse. Different cases of parturition in the one, with abrasion of the mucous membrane, being much oftener followed by disastrous consequences than in the other.

Two cases of purpura hæmorrhagica that came under my notice contain instructive lessons as to how without care we may be the means of producing the very state of things we are most anxious to avoid. A black five-year old gelding affected with purpura hæmorrhagica was brought from an impure and badly ventilated stable to our premises for treatment. The effusion into the areolar tissue around the respiratory passages of the head was so great that it became necessary to perform tracheotomy. About three days after this we noticed a nasty offensive techerous discharge from the wound; the animal dying in eight days, a well-marked case of what was then called "pyæmia" or the septicæmia of to-day.

I have now to acknowledge how unintentionally I was the means of inflicting an injury upon a member of our Association and one of his clients. He asked me to see a case of purpura under treatment in his infirmary, and which I suggested would be relieved by the operation of tracheotomy, and in response to a request that I would send him a tube, as those he had were either in use or not to hand. We, unfortunately, sent him the one that had been used in our case that died from septicæmia. The result, although my assistant assured me he had thoroughly cleansed it, was most disastrous, his case dying some time afterwards, also a well-marked case of septicæmia. In the human surgeon's practice they do not now consider it safe to perform tracheotomy in hospitals unless the patient is kept in an antiseptic steam tent, that is, a tent with steam mixed with carbolic acid. I can imagine some of you saying to

yourselves Well, this is all very well where it can be applied, but we can never do to be bothered with all this cumbersome detail.

I will without enlarging try and demonstrate to you how we can with the greatest benefit apply a modified form of antiseptic treatment in our cases. I have here a portion of the shaft of a cart, which in a collision was driven into the muscles of the thigh of a blood chestnut mare. It entered about four or five inches above the right stifle, and pursued a course from before backward, coming out through the biceps rotata tibialis muscle. The force must have been terrific, first of all to make it pierce the skin twice, traverse all that mass of muscle, and after making an indentation on the face of the dash-board, it was broken off as far as you see it, and the mare was brought from Cheetham Hill Road to Moreton Street with this buried in the muscles of the thigh. Very considerable force was required after a rope was passed through the D to withdraw it. Now, the treatment in this case was strictly antiseptic, and although exceedingly simple most satisfactory. We first passed a large strong probe armed with cotton wool and saturated with carbolic acid and glycerine into the wound to destroy any germs. Then so fastened a large piece of lint saturated with the same that it covered both external openings. No water in any form whatever was allowed to go near it. No fomentations. No cold water pipe. Simply wiped away the discharge with dry materials, as tow or wool, and kept the lint saturated with the carbolised oil or glycerine. In a fortnight the posterior external opening was closed. In three weeks from the anterior one just a drop of sweet pus occasionally oozed, whilst in less than four weeks it was entirely healed and the mare discharged. In a case like this it would be almost impossible to prevent suppuration, but this method will prevent putrefactive suppuration.

The late Mr. Haycock used to say wounds did better without water, that it washed the healing away. It is needless to say that I was then not open to conviction; and although he was wrong in his theory, the fact he had noted was correct, as all facts must be, and will, if not now, at some future time, be acknowledged by all surgeons.

It is astonishing what prejudice custom creates. It is said of an old departed yet celebrated French surgeon, that the whole body of surgeons in his day condemned him because he had the courage to operate on the wounded after a great battle, before the boiling oil that it was then the custom to pour on wounds and the stumps after amputation could be procured. I say his professional brethren shunned him as one likely to bring discredit on his calling, because after he had noted the fact that his cases did better when treated without the oil, and that he therefore determined to discontinue its use. Whilst speaking of bygone days, I would just remark that no doubt many of the old severe dressings applied to wounds were too antiseptic, and that they not only destroyed the germs, but the tissues too. The operation of Neurotomy is, perhaps, one of the most convenient in our practice to apply antiseptic treatment, which can be done in the following manner:—Under the limb to be operated upon place a dry, clean towel over the straw, touch with an antiseptic, as carbolic and glycerine, the skin to be cut, and your instruments, and instead of using a sponge, if there should be hæmorrhage, use the dry towel. After the operation touch the whole of the interior of the wound with the antiseptic dressing, put in a wire or catgut suture, if necessary; then a small pad of cotton wool soaked in the dressing, next to the wounds, over that another pad of dry cotton wool and a *dry* bandage, which allow to remain undisturbed until such times as you think the wounds are healed. With this method there is little or no swelling of the limb, no suppuration; and the last case in which I

operated the mare was at her usual work in seven days, healed and sound. One word of warning; when you have a constitutional or strumous diathesis in your patient antisepticity will not remove that.

Summary.—Discovery and proof that the germs which produce, under favorable circumstances, "Bacteria, are floating about in the air, how they get there we are as yet unaware; but that whilst the germs are aerial, the parents are aquatic, and prefer swimming to flying." They are capable of rapid growth by means of division, and are of various kinds. Whilst some appear harmless, others are, or have the power of, generating specific properties. Bacteria of some kind are necessarily present before putrefaction can take place; this is proved by the fact that matter most prone to take on putrefaction, if only pure air is permitted to come in contract with it, if the air be better filtered or rendered sterile by the use of some antiseptic agent, that septicæmia is due to the introduction into the system by septic matter, which is a product of putrefaction produced by Bacteria.

The agents that destroy this and render anything containing it sterile, are termed antiseptic agents. Those most generally in use, and how to apply them so as not to retard the reparative process, antiseptic agents, are not to heal wounds, but to place them in such a state that the healing process only will be allowed to operate. In conclusion, gentlemen, this is an important subject that I have tried to place before you. It contains but little matter the result of my own individual effort; for the main features we are indebted to the special Scientists. My part has been simply, yet efficiently, I trust, to apply them to some practical purpose; and whilst science, whose soul is explanation, halts with hostile front at mystery, who shall say, until the strife is over, which of her children shall most deserve the victor's wreath for his crown.

An interesting discussion followed, in which the following gentlemen took part:—Messrs. P. Taylor, W. A. Taylor, W. Pallin, R. Reynolds, D. Hutcheon, Mr. Whittle, Dr. H. Brigg, Mr. Palin, &c.

A cordial vote of thanks was accorded the essayist for his very admirable paper, and also to the chairman.

SAMUEL LOCKE, *Hon. Sec.*

NORTH OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

THE first meeting of this Association was held in the Douglas Hotel, Newcastle-on-Tyne, on Friday, May 31st, 1879. Mr. D. Dudgeon, President, in the chair.

There were present—Messrs. C. Stephenson, H. Hunter, A. Hunter, G. Elptick, J. Gillespie, J. Corbett, W. S. Pringle, W. J. Masters, C. T. Shorten, Dr. Armstrong (Newcastle-on-Tyne), D. Macgregor (Bedlington), W. Wheatley (South Shields), J. Gofton (North Shields), J. Mulvey, Bishop Auckland, Mr. W. Anderson (Hexham), J. Nisbet (Fence Houses), Professor Williams (Edinburgh), Messrs. Foreman, Junrs. (Leadgate), A. L. Butters (Sunderland), C. Hunting (South Hetton), and the Secretary.

Letters of apology for non-attendance were received from Professor Pritchard, Messrs. T. Greaves, F. Welsby, D. Hutcheon, J. Storie, F. Meikle, T. Foreman.

The *President* said he would not trouble the members with an in-

augural address, as their time would be far more profitably employed in listening to Professor Williams' paper. He had an intimation to make which would meet with the approval of all present, viz., That Professor Williams had been elected President of the Royal College of Veterinary Surgeons for the ensuing year—an announcement which was received with great applause.

Professor Williams then read a very able paper on "Splenic Fever and the History of the *Bacillus anthracis*," exhibiting microscopic drawings of the *Bacillus*. At the conclusion of the paper he thanked the members for the attention they had given him, and also for the hearty manner in which they had received the announcement of his election as President of the Royal College of Veterinary Surgeons, a post which he would endeavour to fulfil to the best of his ability; he also informed the members that the next annual meeting of the Royal College of Veterinary Surgeons would be held in Edinburgh. He referred to the union which had been brought about with the members of the Royal College of Veterinary Surgeons and the Highland Society, a thing which he had long striven for, and which had now been brought to a successful issue mainly through the indefatigable endeavours of their late President General Sir F. W. Fitzwygram.

A very animated discussion followed the reading of the paper, in which Messrs. Macgregor, Gofton, Stephenson, H. Hunter, F. Nisbet, A. Hunter, Mulvey, Elptick, C. Hunting and Dr. Armstrong took part.

Mr. Stephenson proposed and *Mr. H. Hunter* seconded a vote of thanks to Professor Williams for his kindness in coming and reading them such an instructive paper.

Professor Williams having replied the meeting terminated.

Afterwards the members and guests sat down to an excellent dinner at which all the patriotic and other toasts were ably proposed and responded to, a very enjoyable evening being spent.

G. R. DUDGEON, *Hon. Sec.*

THE SCOTTISH METROPOLITAN VETERINARY MEDICAL ASSOCIATION.

THE quarterly meeting of this Association was held in the London Hotel, Edinburgh, on Wednesday, the 4th June. The president, Mr. Rutherford, occupied the chair; there was a fair attendance of members.

A motion by the President, that the Association subscribe the sum of one guinea to the Scottish Society for the Prevention of Cruelty to Animals, was carried unanimously.

The *President* gave notice of a motion, recording the satisfaction with which the Association viewed the agreement recently concluded between the Highland and Agricultural Society and the Royal College of Veterinary Surgeons; an agreement calculated to lead to the complete unity of the profession.

Professor Walley exhibited a beautifully stuffed calf with two fully formed and distinct heads and necks, a double spine and two tails. The fœtus had been forwarded to him by Mr. Taylor, of Seaford, and he had it stuffed for the college museum. The fœtus being of a fair size, the two heads offered a serious obstacle to delivery, but this Mr. Taylor had effected without mutilating the calf; the cow afterwards did well.

Professor Walley also submitted for the inspection of members several other pathological specimens, including the head of a goat affected with osteo-porosis, and the cæcal tubes of a fowl, in the walls of which were imbedded nematode worms.

Mr. Dacre, of Manchester, who was present as a visitor, showed the proximal extremity of the radius and ulna of a heifer which had suffered from sudden and excessive lameness of the elbow-joint. The lameness was not traceable to any external injury. After death the articular surface of the radius was found to be extensively diseased, the articular cartilage and underlying compact tissue being in parts removed, and the cancellated tissue exposed. The subject had been of a scrofulous constitution, and *Mr. Dacre* thought the arthritic disease was of that nature.

Mr. Reid stated, that for the past nine years, during which period he had been inspector at Leith, the burgh had never been free from pleuropneumonia. He was now, however, able to state that there was not a case within the bounds, nor had there been one for fifty-six days. This very satisfactory state of things he attributed chiefly to the practice of inoculation which had recently been carried out by *Mr. Rutherford*.

Professor Walley, while inclined to give considerable credit to inoculation, thought the result was in great measure due to the operation of the new Contagious Diseases (Animals) Act, which prevented the introduction of new cases from without.

Mr. Robertson, Kelso, in continuation of a paper read by him at a previous meeting, made the following remarks on the subject of "Arthritis or Joint Disease in young animals."

MR. CHAIRMAN AND GENTLEMEN—Having in my former appearances before you entered somewhat in detail into the *morbid anatomy* and *pathology* of *arthritic* disease in young animals, I had intended at this time more particularly to have directed your attention to its probable *etiology*, examining in detail those various causes which observation and experiment seem to indicate as operating in its production. This, however, I will not now attempt, but endeavour in few words to bring the subject to a conclusion at this time. I fear I have already been somewhat tedious, and prevented you from considering other matters at least equally important and interesting. If I have not given you aught new on the subject, or propounded any startling theory in connection with it, I have had at least the satisfaction of having accomplished one great object, that of bringing this disease under the notice of this society, then to obtain what facts and information others may possess who have encountered it in some of our animals. In previously remarking on the subject of arthritic disease, notice was taken of its more extensive distribution and virulent form of development in all our domestic animals at the present time than what appears to have been the case in the early part of the present century or the latter part of last. I would also desire that you remember that it is chiefly in all these animals—horses, cattle, and sheep, a disease of the superior varieties; or it may be of any variety when bred and reared under markedly artificial conditions of existence, and that it rarely appears amongst our more primitive breeds, unless these are largely manipulated and interfered with, with a view to their rapidity on perfection of development, that when appearing amongst a number of animals, calves or lambs, it rarely attacks isolated individuals, but rather assumes the enzootic form. Further, that when appearing amongst stocks, particularly sheep, we observe that the dams are very generally serious sufferers from some markedly systemic disorder.

Although not ignoring the fact that both the *rheumatic* and *scrofulous diathesis* may in cases act as sources from whence spring the varied phenomena presented during the development of certain forms of arthritic disease. Nor yet, that *umbilical thrombosis* and *disseminated abscesses* are very generally accompanying features of the most virulent and largely-distributed outbreaks of this malady. I am, nevertheless rather inclined to the belief that there seems evidence sufficient to convince me that these conditions of structural changes in connection with the articulations, that the *omphalo thrombo phlebitis* and general *pyæmic* condition may be most satisfactorily regarded as simply the outcome or development of a condition of foetal malnutrition. The causes, whatever these may be, are *ante* not *post* parturient; they must be looked for not as operating on the young animal after birth, but as those which influence its development during intra-uterine life. Inflammation of the umbilicus and umbilical vessels is undoubtedly a very prominent and early feature in all serious outbreaks of the disease. But this condition of these parts of the circulatory apparatus in these young creatures, foals, calves, and lambs, I most strenuously mention is not *solely* or *chiefly* the result of inoculation with filth or septic matter through medium and because of the open umbilicus. During intra-uterine life we have the condition of purulent *omphalo-phlebitis* and particular and general *thrombosis* with disseminated abscesses.

The animals are born with omphalo-phlebitis well developed, and how can any amount of care—which the genuine pathologist so much insists upon—bestowed on the navel of the newly-born domesticated animal, or any sanitary conditions, prevent a condition of matters which already exists?

Again, it is contended by those who object to its dietetic origin, that the strong as well as the weak are sufferers, and that it appears independent of the nature of the food of the parents.

I am satisfied that it will appear in stocks on almost every variety of food. It is not the particular kind of food so much as its modes of administration, or the manner in which the animals are fed in relation to other circumstances and conditions. If you carefully analyse the different outbreaks with which you may be familiar, you will find that this arthritic disease seems to appear as the sequel to every or any condition and combination of conditions which tend to the production of animal tissues and elemental structures imperfectly elaborated or developed.

The more I consider the matter, and the more I have to advise regarding the rearing of our young animals, the more am I convinced that the best of our stock animals, male and female, particularly the former, in these varieties of the several classes which, by general consent, are regarded as the most highly developed and improved, are in much pertaining to their constitutional vigour as well as powers of procreation greatly impaired, and in many instances irreparably damaged, by the system of dietary to which they are subjected in order that they may make a good appearance in the show-yard. No, Mr. Chairman and gentlemen, the pampering and forcing, the unnatural stimulation so much in fashion will give us fat animals, but certainly it is not calculated to give us the most healthy and well-developed animals, capable of transmitting to their progeny, in the highest degree of perfection, those qualities for which the variety may be particularly admired. It is a common remark by some skilled observers when admiring in the show-yard our over-fed stock animals, that they seem very soft. This is critically and scientifically correct to an extent that they who make it little imagine, for not only are the tissues of these animals marked by a

want of tenacity and perfection of development, but we find that their progeny in foetal life are characterised by similar features. In numerous instances the embryonic ciber seem incapable of progress beyond a certain point, their protoplasmic contents instead of undergoing progressive development, take on degenerative changes, and instead of consolidation in texture the obvious condition is softening and liquefaction.

Depend upon it, gentlemen, it will be of comparatively little benefit, all our treatment, even the prevention, as applied simply to the young, so long as we allow the constitutions of the parents to be invalidated.

I have said nothing as to the curative treatment, when this is attempted in arthritic disease. I have left this to be taken up in the remarks and discussion which may follow.

I will now leave the matter in your hands, thanking you, gentlemen, for the patience with which you have listened to my somewhat lengthy treatment of this subject, and trust that all who have seen this disease will give us their experience, for I am satisfied that it is only by a collection of facts and observations that any real progress can be ever made in the science of medicine; as, also, that the youngest practitioner of any department of the healing art as long as he adheres closely to these indications, is fully entitled to call in question the deductions or hypothesis of the fathers of his profession.

During the discussion which afterwards took place, the *Secretary* stated that in reply to an invitation to attend a previous meeting, he had received from Mr. Gerrard a letter regretting that distance would not permit him to be present to hear Mr. Robertson's paper, and at the same time a short communication embodying his own views and experience of the disease. At the request of the members, the communication was read. The opinions expressed by Mr. Gerrard in the main coincided with those of Mr. Robertson.

The meeting terminated, after a hearty vote of thanks to Mr. Robertson for this and other valuable contributions which he had made, to our knowledge of arthritic disease in young animals.

JOHN MCFADYEAN, *Secretary*.

Veterinary Jurisprudence.

CHARGE AGAINST THE EARL OF LEICESTER.

At the Walsingham Petty Sessions on Monday, June 2nd, before J. S. Scott-Chad, W. G. Waters, E. P. Middleton, and H. Lee-Warner, Esqs.,

The Right Honorable the Earl of Leicester, K.G., was summoned by Edward Case, of Fakenham, veterinary surgeon, the Inspector of the Local Authority, on a charge of causing a certain animal, to wit, a sheep, to be driven on the highway at Holkham, on March 3rd, 1879, the said animal being afflicted with sheep-scab. A second charge was made of allowing 200 suspected animals to be driven on the road at the same time and place.

His lordship, rising to hear the charge, pleaded "Not guilty."

Mr. Blofeld (instructed by Mr. R. Cooper, solicitor) appeared for the complainant; and Mr. Chittock, of Norwich (Chittock and Woods), represented the right honorable defendant.

Mr. Blofeld addressed the Bench at great length, pointing out the various clauses and sections of the Act bearing upon the case in question, and the Orders in Council issued under the authority of the same. He

then proceeded to describe the disease (the sheep-scab), pointing out the malignant nature of the same, and the necessity of isolating diseased animals for lengthened periods. He next proceeded to detail the facts of the case before the Bench, and pointed out that the inspector of the district was the officer certainly included amongst those who might suspect the animals of disease. Correspondence was then referred to between Mr. Cooper, solicitor to the Local Authority, and the Earl of Leicester, and finally he pointed out the reason of the prosecution, the Local Authority feeling it their bounden duty to prosecute quite irrespective of individuals.

Mr. E. Case, veterinary surgeon, said—I am inspector of the district in which Holkham is situated. I am the only inspector. In the autumn of last year I received a notice from Freemer, Lord Leicester's steward. I went there on November 9th, and found 1819 sheep in Lord Leicester's possession. There were about 100 in the yards. I found the sheep in the yards and on the farm diseased. I gave notice for the sheep to be dressed. I went again on November 30th. I found one of them in a field in the park. I asked for no further animals, one being sufficient to affect the flock. I went again on the 24th with Professor Axe. Mr. Freemer, the steward, was there, and Mr. Shellabear, the agent. The professor came at Lord Leicester's request. He was quite of my opinion. On January 28th I again went. I found a sheep there still suffering with the disease. Finding one, I did not look further. On February 25th I went again, and found another one in a fold in the park field still affected. It was not a bad case, but there could be no doubt about it. There was just one spot behind the shoulders. There was a man at the fold. I did not show him the spot. Mr. Freemer had asked for a certificate of removal. I told the shepherd and also Mr. Freemer that I could not grant it, as one sheep was diseased. I gave a certificate to that effect. On March 7th I made a report to the Local Authority of hearing of the removal of the sheep. His lordship was not right in supposing that I wanted to put him to any unnecessary trouble. I simply did my duty as I should to any farmer in the neighbourhood.

By Mr. Chittock—I examined some sheep of Mr. Cornish's in February. He lives at Walsingham. There were about ninety-eight sheep. I found some diseased. I directed them to be removed from the others. I gave on order for removal in about six weeks. It is false to say I did so in the week. I make memoranda in my pocket book. On looking I find I did not make an entry as I thought. It must have been made in some other book. I believe four of Mr. Cornish's sheep were slaughtered. I swear it was more than a month after when I allowed the sheep to be removed. At Holkham the sheep in the field were some three quarters of a mile from those in the yards. Those in the field were shut in with wire netting. That might cause a pulling of the wool. I found one diseased; that satisfied me. On November 30th I found one in a field. They had been dressed, but not long enough to know whether it was done effectually. I said that the best thing to be done was to remove the diseased ones from the others. On December 24th I went with Professor Axe from the Royal Agricultural Society. Mr. Woods, from Merton, was also there. The professor did not decline to give an opinion. He took a portion of the scab to London to examine it microscopically to satisfy Lord Leicester. Professor Axe did not say the disease was in a very mild form. I did not hear Mr. Woods say so. On December 24th I did not look at those in the field at all, I did not think it was necessary. On January 28th I found one sheep in the fold with the scab. The fold was in the field. I told the man the best thing he could do was

to turn it out. I heard that had been done. I examined them in the yard that day. Before my next visit the sheep had again been dressed. I have heard of "Bigg's Specific" and "Bigg's Composition." They are good for lice and tick, but not for scab in my opinion. Weakly sheep sometimes are removed into the yards. On February 25th I went to inspect the sheep again. I saw the shepherd, Bailey. One sheep was affected. Eight, ten, or a dozen, may have been caught for me. I said, "Let him go; I have seen quite sufficient." Bailey was not the man who caught the sheep. I cannot say how many were caught. I was in the fold over twenty minutes. It is not my duty to separate the sheep. I was not annoyed at Lord Leicester calling in another man. There is no foundation for saying so. There are other causes of skin irritation besides scab. I am certain the sheep I saw on February 25th had the scab. There was an exudation from the skin. The scab itself had not formed. I told Bailey, the shepherd, the same day. I told him there was one sheep in the field with the scab. I told Freemer afterwards. I cannot say it was the same day. Freemer said it was a bad job. I cannot say where this was. A sound sheep would be about ten or twelve days affected before the young acari became developed. The scab would be formed in three or four days more. There would really be a second crop of these insects in a month. Mr. Hamond is a very competent man in my opinion. A case of scab amongst so many sheep might escape the eye of the best veterinary surgeon. I found it there whether Mr. Hamond did or not. On March 3rd I heard of the sheep being removed. I did not send a telegram to Inspector Howe. I saw some sheep at Fakenham in the trucks. I had heard a report from the police. I went up to the trucks and saw the direction. It agreed with my information. I am not certain they were the sheep. I did not examine them. I did not make any inquiries as to what had become of the sheep. I did not make any complaints to Lord Leicester as to the sheep being removed. I only wrote to Mr. Hamond on the subject.

Mr. W. G. Packman, of Docking, Member of the Royal College of Veterinary Surgeons, said—I am acquainted with sheep-scab. The insect deposits its eggs between the two skins. The eggs will be hatched in about sixteen days. The dressing for scab will not kill the eggs—only the living parasites. After having scab it would not be safe to remove animals for at least a month. Anywhere the sheep rubbed would give it to other sheep rubbing at the same place.

The Bench—We cannot see that it is necessary to go into the details of the disease.

Witness—The risk of contagion would last for at least three weeks.

By Mr. Chittock—The risk of contagion from the rubbing places would be greater in warm weather. It is possible for the sheep to be cured and become infected again at these rubbing places.

Mr. Carter, of East Dereham, veterinary surgeon, was of opinion that it would not be safe to remove animals for a month after the scab was proved to be in existence. He quite agreed with the last witness as to the danger of infection.

James Freeman, farm bailiff to the Earl of Leicester, remembered Mr. Case coming to examine the sheep at the end of February. At Fakenham, on February 27th, I asked Mr. Case for a removal order for the sheep which he had inspected. He refused it. I knew he had been to examine the sheep. I did not know what Mr. Case meant, I only know what he said. He said, "He did not like the sheep that had been affected, he would see the next visit." I don't remember telling him it was a bad job. I told him the sheep would not be there the next time. This

was on February 27th. I told Lord Leicester what Mr. Case had said. Then Mr. Hamond, of Bale, was sent for. He examined for sheep-scab. He came on Saturday, March 1st. After his examination, Lord Leicester authorised me to send them off the farm. The sheep were fat, and the turnips nearly finished. They were sold to Mr. Plattin, of Croxton, and a few to Mr. Southgate, of Wells. Mr. Plattin sent for them on Monday, March 3rd. My man helped to drive them up to the park gates, and no further. The public road begins just outside the park gates. I told my man to drive them no further than the gates. I did not tell Mr. Plattin anything about the scab. There were 1159 sheep, some in fold and some in the yard sold to Mr. Plattin, and thirteen to Mr. Southgate.

By Mr. Chittock—500 were sold to Mr. Plattin on March 3rd—400 from the field and 100 from the yard. There were three folds in the field, containing 721 sheep. 400 of those were sold to Mr. Plattin. I had nothing to do with the delivery of them, only at the fold. I did not see them taken away. These sheep were dressed with "Bigg's Specific" in the middle of November, after Mr. Case had seen them. The disease was in a very mild form. In December Lord Walsingham's shepherd came over to examine the sheep. He did not think it sheep-scab at all.

The Bench thought that this did not affect the case.

Mr. Chittock said they would find it did. There were two ways of reading an Act of Parliament, and he suggested that Mr. Blofield had read it wrong.

Witness then continued—Professor Axe came down. He would not give an opinion that day, but said he would take some of the scab home, and then write to Mr. Shellabear. After this the sheep were all dipped, not for scab, but for any insects that might be in the wool. On January 30th I found two cases of scab. Mr. Case had found one on January 28th. These three sheep were slaughtered. Mr. Hamond examined 1172 on March 1st, including all in the field. From January 30th I never discovered another case. I had carefully watched the sheep every day. When the sheep were sold I believe they were all perfectly free from disease. I gave notice on January 30th to Mr. Case that I had found two more diseased sheep. On February 20th I asked him when he was coming to examine the sheep. He said he would send me a post card. He did not do so. I was not at home on the 25th. I never heard from him that he had found a diseased sheep on that occasion. Bailey, the shepherd, is under my orders. I thought it was necessary to get a certificate of removal. It used to be so. Mr. Case told me if I saw any more scabby sheep not to take them from the others. I don't believe there was one. There were sheep left on the farm which had not been examined by Mr. Hamond. Of these, some had been killed for the house, and the others were there still. January 30th was the last time I discovered any scab.

By Mr. Blofield—I never made a mistake about the scab in sheep. (After a passage of arms about a previous sale at Holkham, Mr. Blofield did not persist in pressing a question affecting witness' judgment on the matter.) After Professor Axe's visit the sheep were dipped, but not for scab.

John Barwick, of Croxton, shepherd to Mr. Plattin, said—In the beginning of March (the 3rd) my master sent me to drive some sheep from Holkham. I ran ninety out that morning. I went to the fold for them, and the men helped me to drive them out of the field. I took them to Walsingham. On the 5th of March I took the next lot—over 200. I have no memorandum of it. I took them to Walsingham—to the station. I did not know anything about the scab.

By Mr. Chittock—I saw no symptoms of it. I have had experience for forty-five years, and have seen thousands with the scab. I saw nothing in these sheep indicating it. I am in Mr. Plattin's permanent employ for weekly wages, and have been so for fourteen or fifteen years. Mr. Plattin chose out the ninety sheep, and told me where to drive them. No one else gave me orders. The man who tended them helped me out of the field with them. I was ordered by Mr. Plattin to book them to Mr. Hawkins, of Harrow. I did so. There were no others moved on that day. I went as far as Fakenham with them. I saw Mr. Case, the inspector, there. He went down the line and looked at them. He did not speak to me. I afterwards removed a number of other sheep by my master's orders. On the 5th of March I sent 208 to Mr. Syder, of Fakenham, to Tottenham, and on March 8th 100 to the same person, and 217 to Mr. Hawkins, of Harrow. I afterwards sent some to Wakefield and Thornage, and others to Mr. Hawkins, of Harrow, on two or three occasions—altogether 1159. I took these all away from Holkham by my master's directions. I did not observe a symptom of scab amongst them.

James Scoles, yardman to Lord Leicester at Holkham, said—I remember the sheep being removed. I helped to drive some away this winter time from the great barn. I don't know when.

Mr. Blofeld withdrew the witness, observing he came from the hostile camp. The Bench would see his difficulty.

Thomas Ransome, another yardman, remembered Mr Plattin taking sheep away from Lord Leicester's. I helped to drive them. I don't know when. Mr. Freemer told me to help. I don't know what quantity; more than a score, somewhere about a hundred.

[*Mr. Ransome*, of Darlington, called by Mr. Chittock by leave of the Bench, witness having important business engagements, deposed to receiving ninety sheep from Plattin on March 18th. I saw no scab amongst them. I had some of them for three weeks. I never saw any symptoms amongst them. I handled them for value; if they had had the scab I must have known it.]

Mr. Blofeld resumed: but the Bench said the question was as to the animals being suspected. Mr. Chittock observed that it was for the defendant to suspect, not the inspector. The Bench said the case had better go on.

Thomas Ransome (examination resumed) assisted to drive them to the park gate.

By Mr. Chittock—I did not help with the first lot. I did afterwards with another lot as far as the gate, and no further. I don't know when. I remember Mr. Case finding a sheep diseased two days before Mr. Freemer found two others. Mr. Case told me to turn it out. Mr. Hamond came to examine the sheep a few days before Mr. Case had been there. I caught three. To the first he said, "Let that go;" to the second he said the same; to the third he said, "All right, let it go." I have been used to sheep for thirty years. On February 25th the sheep were all sound. I could see nothing the matter with them. I saw nothing wrong from the day Mr. Freemer took the two out.

By Mr. Blofeld—Professor Axe did not come to my sheep in the field.

Mr. Blofeld said that was the case for the prosecution.

Mr. Chittock, for the defence, contended that no case had been made out. He was quite prepared to meet the case on its own merits. Lord Leicester had acted perfectly *bona fide*; everything had been done that was possible; the law had been fully complied with; and, moreover, he was prepared to prove that there was no disease at all when these sheep were

removed. On March 1st a certificate was given to Lord Leicester by Mr. Hamond, one of the Local Authority's officers, a most competent man, stating that there was no disease amongst the animals, how then could he suspect disease, and why should he hold them to please Mr. Case? They were sold to Plattin, delivery at fold; they were then at Plattin's risk, they were his property, and Lord Leicester had nothing more to do with them. Plattin picked out the sheep, his man drove them away, and if any person drove them or caused them to be driven, being diseased (which he denied), Plattin was the man. This might be called a technical point. He was instructed not to employ technicalities, but his friend Mr. Blofeld had tried to close his mouth by a certificate which he put in, and, therefore, he (Mr. Chittock) should certainly most strongly insist upon this point. The sheep were not the property of the defendant, but of Mr. Plattin, the dealer. Even assuming the animals were diseased, there was nothing in the law to prevent the sale of them on defendant's own land. Further, Mr. Case had been acting under the old Act, and did not appear to know that his authority was not required to sell the sheep. Under the old Act it was, but now they were only prohibited from moving them along a public highway. He further contended that the certificate put in by Mr. Blofeld, being the certificate of a veterinary surgeon, and to be taken as conclusive evidence, did not apply to the charge against his client. He further contended that by the Act his client, not knowing of the disease, and not being able, by exercising reasonable diligence, to ascertain the fact (if it existed) there was no longer any offence committed. Further, he was able to trace the ninety sheep up to the present moment, and no sign of disease had ever shown itself. Alluding to orders of the Local Authority, he drew attention to one, which said that any person in possession of a diseased animal, or suspected of being diseased, should give information to the inspector, arguing therefrom that it was not the inspector, but the owner who must have the suspicion. He then proceeded to quote one or two cases bearing on the point, and concluded a long and very clever address by appealing to the Bench to treat his client the same as any other defendant, as Lord Leicester wished not to evade the law, but to set the example of submission thereto.

For the defence several witnesses were called, including Mr. H. Woods, of Merton, a well-known authority on all matters relating to sheep, and who had examined the sheep; Joseph Bailey, the shepherd; Mr. J. Hamond, of Bale, Veterinary Inspector for the Holt District; Mr. Clapham, and other persons who bought the sheep—all of whom stated that the sheep were not diseased. The Earl of Leicester also gave evidence, and said—I authorised Freemer my steward, to sell the sheep in consequence of my own knowledge and Mr. Hamond's report. I had not the slightest suspicion of any disease whatever existing in my sheep on March 3rd last. Had I inspected one sheep I would not have allowed any to be sold.

The Bench retired, and, on their readmission, said they had decided to dismiss the case, because the defendant had satisfied them that he did not inspect the animals removed. Each side would pay their own costs.—*Norwich Mercury.*

THE CASE OF GLANDERS AT HERTFORD.

June 12th, 1879.

SIR,—I beg to forward you the report a case that was tried here on the 7th inst. The only comments I need make are, that the defendant

was prepared with witnesses to prove that the horse when he bought it had a discharge from both nostrils, and an enlargement beneath the eye on the right side of the face. That such enlargement was due to a kick received some months ago. That the discharge only occurred at times, and then chiefly after exercise. That the animal had regularly worked the whole of the time. Other animals had stood in the same stable with it, drank out of the same pail, and ate out of the same manger. Also, that the veterinary inspector examined it in a very dark stable, that he did not bring it out into the light, and that he was not more than two minutes in making his examination. I was called in two days after it had been certified as affected with glanders to examine it (not having been informed of such previous examination) and I found not a single symptom to warrant such a conclusion. The general health was good, temperature 99°, pulse 42, no ulceration of the Schneiderian membrane, no enlargement of glands. The discharge was somewhat thick and of a yellowish-white appearance; it was intermittent and did not adhere to the nostrils. The animal ate and drank well, and in every respect was apparently free from constitutional disease. The defendant destroyed the horse against my wish, but under some misrepresentation or misapprehension from the local authority. A *post-mortem* examination of the head was made two days after the animal had been slaughtered, in the presence of Dr. Syson, medical officer of health, Mr. Reynolds, of Chatteris, M.R.C.V.S., and myself. The result of that examination was to convince us all without a shadow of a doubt that no single symptom of glanders had ever existed. The case was one of nasal gleet, which originated doubtless from a blow on the face, which caused the enlargement seen during life. An abscess had formed, which we found to contain nearly half a pint of matter. The abscess was of a chronic nature, in fact, a cess pit in the bone, lined with a pyogenic membrane, and with an overflow and discharge into the nostrils.

Although the head, with the glands, &c., was in Court and ready to be produced on the defendant's behalf, the Bench declined to allow it, but the evidence of a single veterinary inspector to be taken as final, although each and every statement, not only by theory, but by facts, could have been refuted.

As I consider the decision of very great importance to the veterinary profession, I beg to ask you to report the case in the next issue of your valuable Journal, with such comments as you may consider the nature of the case demands.

I may add that the head is still being preserved for any member of the profession to see.

I am Sir

Your obedient servant,

GEO. FOWLER M.R.C.V.S.

To the Editors of the 'Veterinarian.'

HUNTINGDON DIVISION PETTY SESSIONS, June 7th.

Before Rev. P. F. Rooper (in the chair), G. I. Bevan, B. Brown, P. E. Tillard, F. J. Howson, and A. W. Marshall, Esq.

Thomas Brown, of Hartford, appeared to an adjourned summons as charging him with neglecting to give notice to the police that his horse was affected with glanders.

Mr. W. A. Watts, of St. Ives, appeared for the defendant.

Chief Superintendent Marson was resworn, and said that after he received the certificate from Mr. Fordham, the veterinary inspector, he went to Mr. Brown's. Defendant had been to the police station in

the mean time. He told defendant that he would be summoned. Defendant then said that Mr. Fordham had told him the horse was suffering from glanders. He (witness) should not consider that a notice.

Mr. F. B. Fordham, the veterinary inspector, was about to be sworn, when Mr. Watts remarked he presumed that by calling him the certificate was set aside.

After the magistrates had considered the point, the chairman remarked that they hardly considered it was a certificate, but at the same time they did not see the necessity for a certificate at all, as Mr. Fordham might be called in evidence.

Mr. Fordham was then sworn, and deposed that he saw defendant's horse on Wednesday, May 28th, at the request of Superintendent Marson. He examined it and found it suffering from glanders. He had no doubt about it.

Cross-examined.—He based his views on the character of the discharge from the nostrils and the enlargement of the near side glands. His examination took about ten minutes. The stable was not dark when the door was open. He examined the nostrils, glands, and the head generally. He examined it partly in the stable and partly outside. He perceived an enlargement of the bones on the off side of the head, but the wound there would not produce such a discharge as he saw on the near side. It was purulent matter, and was rather streaked with blood. It was not flowing when he saw it, but was adhering to the lining of the membrane. He did not test the discharge. He should call it a case of acute glanders. Cases of this kind do not all die in a few days, or else there would be no cases of chronic glanders. He did not test the temperature of the animal. The coat was rough and unhealthy looking and the eyes were dull. He got some of the discharge upon his hand, but did not wash for about a quarter of an hour. Glanders is a most contagious disease, but there would be no fear of his catching the contagion if he had no abrasion of the skin. The horse was not suffering from farcy. If it had been suffering from glanders for six weeks he should call it a chronic case. Acute glanders is generally fatal in seven days. He considered there was ulceration of the Schneiderian membrane. He had been told that there had been a *post-mortem* examination of the head of the animal. The appearances would not be the same in all cases, but he should find disease of the lining membrane of the nostrils and disease of some part of the bones. The glands would be indurated. The normal temperature of the horse would be 92°, and if suffering from acute glanders it would be 100°. It was a case in which he should advise the horse being slaughtered. A wound under the eye might produce a discharge from the nostrils.

To the Bench.—He should think the horse had been suffering from glanders more than a week. The question of the admissibility of rebutting evidence was then discussed, and the chairman remarked that the Bench were of opinion that as by the Act the certificate of the inspector was conclusive there, *à fortiori* his evidence would be conclusive also.

Mr. Watts argued that the certificate was intended to be conclusive until rebutting evidence was called. Although the Act says the certificate is conclusive, yet it was never intended to revert to the old days of the Star Chamber, when a charge was made against a man and he had no opportunity of refuting it. There must be proof on the part of the prosecution that the defendant had knowledge of the disease and this would entitle him to bring rebutting evidence. It would be proved that the horse never had glanders at all, and the inspector had made a mistake. The animal had actually been on the premises of one of the magistrates then sitting on the Bench. (The magistrate: not with his permission).

It has been about a good deal, and there was no suggestion that other animals had been infected. The discharge which the inspector saw came from a kick. He (Mr. Watts) further argued that the defendant gave notice in all practicable speed, although it was not believed to be glanders, and he intended to ask for compensation for the slaughter of the horse.

The *Chairman* said he was directed by the Bench to say that they would like Mr. Watts to confine his case simply to the question of knowledge. They still held and ruled that the evidence of the veterinary inspector was conclusive and precluded defendant from calling rebutting evidence as to the existence of the disease.

Thomas Brown, the defendant, was then sworn, and said he bought the pony at Godmanchester Fair on Easter Tuesday. He noticed a little swelling under the off side eye, and the man told him it arose from a kick, and he took no further notice of it. The wound was about the size of a walnut, and there was a discharge from both nostrils. The coat was very healthy. He constantly worked the pony and went about a good deal with it. It ate and drank well. He went to Mr. Marson directly after Mr. Fordham, had been, but he had no reason to suspect that the pony was suffering from glanders. He received an intimation from his landlord that the pony should be killed.

Mr. Marshall (his landlord and a magistrate).—"It was suggested in the interest of the public that the horse might be destroyed."

The *Chairman* intimated that they were of opinion that the defendant had not knowledge that the horse was affected with glanders, and the case would be dismissed on that ground.

Mr. Watts said he should have proved by veterinary evidence that it was not glanders at all, but perhaps it was better there should be no contradiction of evidence.

The *Chairman*.—The magistrates think that their veterinary inspector is as good as any one you can call, and on that point they are against the defendant.

[The facts of this case are so apparent to a professional reader that no comments on them are needed from us.—EDS.]

COUNTY LIST OF VETERINARY SURGEONS.

ROYAL COLLEGE OF VETERINARY SURGEONS:
10, RED LION SQUARE, W.C.

THE Secretary and Registrar of the Royal College of Veterinary Surgeons would feel obliged by the Editor of the *Veterinarian* kindly drawing the attention of members of the profession to the following County List of Veterinary Surgeons whose present addresses are unknown.

He would be glad to receive information concerning the change of *residence* or *decease* of those whose names are mentioned in order that the forthcoming Register may be corrected.

| BERKSHIRE. | | <i>Passed</i> | |
|-----------------------------|------|------------------------------|------|
| Bettison, Jn. Edmund, late | | Tills, John, late Windsor | 1832 |
| Newbury | 1868 | CHESHIRE. | |
| Sorby, Fred., late Windsor | 1828 | Easton, Alfred, late Chester | 1835 |
| Spicer, Wm., late Lambourne | 1843 | Hordern, Josh. Lowe, late | |
| | | Macclesfield | 1831 |

| DERBYSHIRE. | | Passed | KENT. | | Passed |
|---|--|--------|---|--|--------|
| Buzzard, Alfred E., late Clay Cross | | 1870 | Edwards, Thos., late Wingham | | 1848 |
| Dobson, Robert, late Ticknall | | 1834 | Maxon, Jn. Robert, late Canterbury | | 1852 |
| Draper, Henry, late Ilkestone | | 1846 | LANCASHIRE. | | |
| DEVONSHIRE. | | | Abbot, Chas., late Manchester | | 1841 |
| Sparrow, George James, late Torquay | | 1837 | Adsetts, Fred., do. | | 1875 |
| White, Samuel S., late Barnstaple | | 1861 | Baker, Hugh M., late Liverpool | | 1863 |
| DORSETSHIRE. | | | Barnes, Henry Jas., late West Derby | | 1873 |
| Martin, Wm. Ed., late Beaminster | | 1878 | Burd, Benjn., late Liverpool | | 1822 |
| DURHAM. | | | Eastwood, Frank, late Preston | | 1859 |
| Bean, Nicholas, late Stockton | | 1825 | Ferguson, Pearson B., late Manchester | | 1843 |
| Bean, Parrington, do. | | 1831 | Hodgkinson, Henry Thomas, late Manchester | | 1877 |
| Hadfield, Thomas, Barnard Castle | | 1873 | Laurenson, Jas., late Croston | | 1829 |
| Moore, Wm. Shepherd, Gateshead | | 1863 | Porter, Richard, late Preston | | 1873 |
| Loades, A. M., late Bishop Auckland | | 1863 | Simpson, Wm., late Lancaster | | 1831 |
| ESSEX. | | | Stephenson, Wm., Ulverstone | | 1849 |
| Bagg, Alderman C., late Colchester | | 1866 | Charles, Jn. Wright, late Accrington | | 1840 |
| Clarke, W. S., late Great Waltham | | 1815 | Cooper, John, late Manchester | | 1819 |
| Hall, Geo. A., late Stanway | | 1869 | Cresswell, Henry B., do. | | 1843 |
| Hodgson, Jn. Thomas, late Chingford | | 1814 | LINCOLNSHIRE. | | |
| Lovegrove, Chas., late Leyton | | 1870 | Burnham, C., | | 1828 |
| Neeve, Thomas Wynter, late Colchester | | 1859 | Smith, Francis A., late Louth | | 1835 |
| Robinson, Charles S., late Brentwood | | 1839 | MIDDLESEX. | | |
| Rush, Wm., late Thaxted | | 1836 | Ansell, Wm. M., late Limehouse | | 1862 |
| GLOUCESTERSHIRE. | | | Bailey, Geo. | | 1875 |
| Green, Jn. Lane, late Prestbury | | 1838 | Barclay, Forrest, late Westminster | | 1860 |
| Roberts, John, late Chipping Sodbury | | 1848 | Brown, Geo. A., late Kingsland | | 1866 |
| HANTS. | | | Davies, Josh. | | 1871 |
| Dawkins, Thomas B. S., late Aldershot | | 1872 | Eaton, J. S. | | 1831 |
| Crafts, Howell W. L., late Fareham | | 1854 | Flavell, Geo. F., late Finchley | | 1877 |
| HEREFORDSHIRE. | | | Hardy, John, late Blackfriars | | 1860 |
| Arthur, Robt., late Monkland Iron Works | | 1842 | Elliott, Thomas | | 1819 |
| Fleetwood, Charles Jn., late Hereford | | 1866 | Park, Robert | | 1866 |
| HERTFORDSHIRE. | | | Pring, John | | 1859 |
| Lewis, Wm., late St. Albans | | 187 | Jeffery, Robert T., late Camberwell | | 1843 |
| HUNTINGDON. | | | Keen, John | | 1827 |
| Macer, Jas., late Somersham | | 1869 | Lee, James | | 1845 |
| | | | Standen, James | | 1873 |
| | | | Scott, William | | 1837 |
| | | | Wiggins, William | | 1862 |
| | | | NOTTS. | | |
| | | | Goulson, Page, late Car-coulson | | 1831 |
| | | | Hill, Edwin, late Nottingham | | 1870 |
| | | | OXFORDSHIRE. | | |
| | | | Bennett, Wm., late Banbury | | 1860 |
| | | | Redmond, W., late Witney | | 1832 |
| | | | Sabin, Wm. Thos., late Oxford | | 1870 |

| SOMERSETSHIRE. | <i>Passed</i> |
|--------------------------------|---------------|
| Leach, Peter, late Bristol | 1843 |
| Smith, John, late Yeovil | 1827 |
| Stauffer, Julius, late Wedmore | 1865 |
| Watlock, William, late Bath | 1830 |

| STAFFORDSHIRE. | |
|---------------------------------|------|
| Cammack, John, late Eccles-hall | 1872 |
| Cooper, John, late Walsall | 1833 |
| Smith, George, late Tunstall | 1873 |

| SUFFOLK. | |
|-----------------------------------|------|
| Cotterell, James, late Lowe-stoft | 1857 |
| Goodwyn, R., late Ipswich | 1827 |

| SURREY. | |
|----------------------------------|------|
| Boden, Hesman, late Bermondsey | 1838 |
| Howard, Thos., late Mitcham | 1825 |
| Reeve, Wm., late Lewisham-road | 1847 |
| Titterton, Chas., late Wimbledon | 1825 |

| WARWICKSHIRE. | |
|--------------------------------|------|
| Briggs, John, late Coventry | 1841 |
| France, Jno, late Birmingham | 1828 |
| Marshall, Thos., late Coventry | 1821 |

| WORCESTERSHIRE. | |
|-----------------------------------|------|
| Baddeley, Wm. W., late Worcester | 1836 |
| Forbes, Peter, late Kidderminster | 1847 |

| YORKSHIRE. | |
|--------------------------------------|------|
| Bostock, Charles B., late Barnsley | 1868 |
| Collier, Geo., late Wentworth | 1844 |
| Cowan, Peter S., | 1870 |
| Flint, Wm., late Rotherham | 1825 |
| Ramsden, Samuel | 1840 |
| Taylor, Herbert M., late Barnby Moor | 1867 |
| Thomson, Josh., late Borough-bridge | 1837 |

| IRELAND. | |
|-------------------------------------|------|
| Flannery, Wm., late Cork | 1872 |
| Hewlitt, Ebenezer, late Fermanagh | 1854 |
| Muir, Robertson, late Dublin | 1875 |
| Phelan, Francis W., late Sligo | 1876 |
| Minikin, John B., late Wexford | 1836 |
| Tate, J. Nelson, late Sligo | 1834 |
| Tyrrel, John, late Dublin | 1833 |
| The three last said to be deceased. | |

| SCOTLAND. | <i>Passed</i> |
|---|---------------|
| Allan, Ralph, late Coldstream | 1854 |
| Anderson, Alex., late Glasgow | 1865 |
| Balfour, G. H., M.D., late Fife | 1843 |
| Barclay, Jas., late Perthshire | 1844 |
| Carlisle, Wm., late Wigton | 1847 |
| Clark, John, late Auchenbowie | 1832 |
| Crombie, Jas., late Dunfermline | 1846 |
| Galloway, Peter, late Loan of Errol | 1861 |
| Gillespie, James, late Alloa | 1869 |
| Hay, G. W., late Boswells' Green | 1837 |
| Ironside, William, late Aberchirder | 1870 |
| Joss, John, late Aberdeen | 1861 |
| M'Farlane, Andw, late Trinity Gask | 1848 |
| M'Kerrow, Hugh, late Lesmahagow | 1828 |
| M'Naughton, Jn., late Langholm | 1836 |
| Mason, Robert, late Seacliffe | 1835 |
| Matthewson, George W., late Williamhope | 1862 |
| Moffat, George D., late Edinburgh | 1844 |
| Murray, Wm. C., late Portobello | 1844 |
| Peddie, Wm., late Aberdeen | 1871 |
| Reekie, W. W., late Auchtertool | 1877 |
| Reid, Pat. E., late Middleton | 1844 |
| Reid, Peter, late Falkirk | 1844 |
| Sandeman, James, jur., late Glasgow | 1876 |
| Smith, Gilbert, late Closeburn | 1836 |
| Smith, David, late Forteviot | 1862 |
| Taylor, Wm., late Edinburgh | 1815 |
| Teviotdale, John, late Elgin | 1839 |
| White, James, late Chirnside | 1835 |
| Whyttock, Alex., late Perthshire | 1843 |
| Wilson, Geo., late Edinburgh | 1831 |

| WALES. | |
|------------------------------------|------|
| Attwood, Alex., late Duffryn | 1868 |
| Douglas, John, late Wales | 1869 |
| Hill, John H., late Brecon | 1844 |
| Jones, Thos., late Wrexham | 1845 |
| Cannell, Hardman W., late Knighton | 1849 |
| Gwynne, John, late Welshpool | 1828 |
| Rees, J. Morgan, late Llwynypiod | 1871 |
| Thomas, Griffith, late Aberayron | 1868 |

PARLIAMENTARY INTELLIGENCE.

TRICHINOSIS.

HOUSE OF LORDS, *Thursday, May 29th.*

The *Earl of Belmore* inquired of the noble duke the President of the Council whether it was true that the disease known as trichinosis in pigs had recently been discovered in a cargo of swine recently landed at Liverpool.

The *Duke of Richmond and Gordon* stated that in consequence of a report which he had received from abroad he had caused a certain portion of swine imported into Liverpool from America to be subjected to an examination by the officers of the Veterinary Department, and he regretted to say that the result had been that they had discovered that a portion of the animals were suffering from trichinosis. The examination was proceeding, and at present he was not able to say what steps would be taken in the matter, but he reminded the House that swine coming from abroad were all slaughtered at the port of debarkation. He was glad that the question had been put, because it enabled him to caution the public that the best mode of preventing the spreading of a complaint which would be so dire if prevalent among the human species would be to take great care that ham, bacon, and other portions of swine's flesh should be thoroughly well cooked before being consumed.

THE FITZWYGRAM PRIZES.

THESE prizes, which were open to all students who had graduated at the Royal College of Veterinary Surgeons during 1878-79, were recently competed for, with the following result :

Mr. E. C. Simpson Shave, Royal Veterinary College, London, *First Prize*, £50.

Mr. Thos. Herbert Lewis, New Veterinary College, Edinburgh, *Second Prize*, £30.

Mr. Frank Smith, Royal Veterinary College, London, *Third Prize*, £20.
June, 1879.

WM. HENRY COATES, *Secretary.*

OBITUARY.

WE regret to have to record the death of Mr. John Kell Haire, M.R.C.V.S., St. Helier's, Jersey, which took place somewhat suddenly on the morning of June 5th. Mr. Haire, who had attained to a distinguished position in the Island, was only fifty years of age. A Jersey paper, alluding to his death, says "That the deceased was a Yorkshireman, who was brought up to the law, and came to this Island about twenty years ago. He was the first to organise a system of excursion cars to run round the Island, and was also the first Englishman elected to the post of Centenier, and the only one who has ever sat in the States Assembly."



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Fourth Series,
No. 296.

Communications and Cases.

SYNOPSIS OF CONTINENTAL VETERINARY
JOURNALS.

By JOHN HENRY STEEL, Demonstrator of Anatomy at the
Royal Veterinary College.

(Continued from p. 486.)

Summary.—From the *Recueil de Médecine Vétérinaire*, 15th June, 1879 :—" *M. Bouley's* remarks on *M. Colin's* paper on Tuberculosis." From the *Revue Vétérinaire de Toulouse*, June, 1879.—Review of Journals—Extracts and Analyses :—(*Mauri*) "A Modification of the Method of Performance of Œsophagotomy ;" (*Beucler*) "Poisoning of Fifty Sheep by an Arsenical Bath ;" "Typhoid Fever of Man attributed to the use of Flesh of Diseased Animals as Food" (*Le xix^e Siècle*).

"*M. Bouley's* remarks on Tuberculosis of the Rabbit." *M. Colin* communicated to the Academy of Medicine on the 13th May the results of a highly interesting experimental investigation of the question of inoculation of tuberculosis from one rabbit to another. "The question of the contagiousness of tuberculosis has been much discussed, and still is under debate. Whilst experimentation seems to prove its communicability conclusively, there are, nevertheless, facts which at any rate seem to contradict it. It is still questionable whether the diseased condition which follows inoculation with tuberculous matter is indeed, as in some contagions, the

exact reproduction of the original disease, identical with it in form and in properties, or whether that morbid state does not consist simply of a number of local lesions determined by irritant scattered spines, and capable of terminating in resolution, health becoming completely restored. In support of this last theory a doctor of Nancy has brought forward experiments which are of high interest, and seem to lead to the conclusion that the disease following inoculation with tubercle is not essentially tuberculosis, but something which imitates its form but not its tenacity, being capable of disappearing with time, and of leaving the organism in full health when once it has disappeared. This difference in result necessarily leads to a surmise of some differences of conditions under which the experiments have been performed. Is tuberculosis identical in all species, as are glanders and rabies? and has it the same characters as regards contagiousness in all its stages and in all species? Are the phenomena which result from inoculation always the same, or, on the contrary, may they not vary according to the species furnishing the matter for inoculation, or used for experiment, or according to the time which has elapsed since the death of the animal from which the matter for inoculation has been taken? This last matter is doubtless of great importance as influencing the results. Considered from a general point of view contagion, indeed, can only be considered as a manifestation of life, whether it proceed from the multiplication of vibrios, whose activity supercedes that of the anatomical elements, as has been shown to be the case in certain diseases, or whether it depends on the proliferation of cellules as, perhaps, occurs in eruptive diseases. In this last matter we are as yet only in a position to surmise, but it seems probable that contagion occurs in various ways, and that eruptive diseases, as variola, depend on an active element different from that of such infectious maladies as anthrax; in other words, that all contagious maladies are not parasitic. But whatever the nature of the contagion-element, whether parasitic or cellular, that agent is alive, and the disease which results from it is nothing else than the manifestation of its activity in the organism which has received it. It is because that element, in consequence of its activity, multiplies in the infected organism that a morbid state results from this, and is more or less serious according as the receptive organism is more or less favorable to its development. The proof that the morbid state following a contagion indeed results from the multiplication of living beings is that, if the organism which has

received them does not constitute a medium favorable for their multiplication, they may remain where introduced in full powers of activity, but cause no general disorder. Thus, variola when inoculated in the bovine species gives rise to a scarcely perceptible local condition, to which the animal affected seems indifferent, whilst the element of contagion stored up here preserves all its activity, and manifests it with intense energy when it is removed to an organism favorable for its development. Similar conditions occur when dogs are inoculated with glanders; the virulent element can only produce a local lesion without any general manifestation due to multiplication, nevertheless, it remains in an active living state and in full power of its activity; for if it be carried to a favorable medium, such as the organism of the ass affords, it there, like a germ in a cultivating fluid, multiplies indefinitely, and its increase is denoted by the symptoms of the generalised disease which expresses it. Since contagion, then, is a manifestation of the life of an element, we may conceive, in returning specially to our examination of tuberculosis, that the conditions for the transmission of that disease would be the more favorable, as the active element when introduced into the organism submitted to the proof of inoculation is "more actively living."

M. Colin, in the experiment which he related to the Academy, realised this condition very completely. Happening to obtain a beautiful specimen of tuberculous lesions of the bowels and of the mesenteric glands in the rabbit, he wished to see what tubercle taken *almost from the living animal* would produce in animals of the same species. The inoculation was made in almost infinitesimal quantity with the point of a lancet by three subepidermic punctures in the region of the flank of two rabbits of the same age and of the same litter; whilst a third, also of the same litter, served as a means for comparison by its regular development. M. Colin, in his *mémoire*, points out also the phenomena which resulted in the two animals used for experiment. Suffice it to say the inoculated matter acted virulently, its active element multiplied in excessive proportion, and gave rise to general lesions of extreme intensity. In one subject, killed at the commencement of the eighth week, in order to examine the general lesions in their earliest stage, the following were noted:—"Development of tumours at the points of inoculation, ulceration of these tumours, swelling and tubercular deposition in those glands of the lymphatic system, which are nearest to the seat of inoculation; finally, tuberculosis of the viscera, liver, spleen, kidneys, and especially com-

mening tubercular deposits in the lungs." The autopsy of the second subject, which survived four months after the inoculation, and which succumbed to its effects in a state of very advanced tuberculosis, showed diseased action "which had involved the lymphatic glands, lungs, kidneys, pleuræ, pericardium, meninges, tendinous synovial sheaths, bones, muscles, and even the skin." Here are all the characteristic phenomena of a successful inoculation, which seem conclusive as to the inoculability of tuberculosis, at least from rabbit to rabbit. On no point did the experiment fail in accuracy. The inoculated matter proved its activity by germination, its extremely small quantity became extremely large in the organism into which it had been inserted; in multiplying it had given rise to general disturbance of the system, and, finally, to death. If we compare this positive and well-supported result with similar ones such as experimentation has already produced, notably in the hands of MM. Villemin, Chauveau, and Saint Cyr, it will seem difficult not to allow in tuberculous matter "the special activity which belongs to contagious matter in general, the power of proliferation and dissemination, a property which no doubt varies according to the species of animal, according to the stage of the disease, and to the time which has elapsed since the death of the animal from which the matter for inoculation was taken. Experiments ought to be undertaken to throw a light on these conditions.

Review of Journals from Revue Vétérinaire de Toulouse, June, 1879.—"A modification of the received method of performance of Œsophagotomy." Under this heading we read in the number of the *Archives Vétérinaires* for 25th April a case of obstruction in the calf necessitating Œsophagotomy. As often occurs in such cases, the wound resulting from the operation did not heal readily, and the animal had to be destroyed. This misadventure suggested to M. Tardion, veterinary surgeon of Chantelle (Allier), the idea of modifying Œsophagotomy in the following manner:

"After the first stage of the operation I arrive at the time when we must isolate the Œsophagus and keep it out; in place of cutting through the two tunics, would it not be preferable to make use of a cutting instrument, of the size of a suture needle, for example, with which to pierce to the middle of the potato, for that, generally, is the obstructing body, and divide it into two or more parts by cutting? Thus, without being taken out, it would be rendered capable of traversing the rest of the Œsophagus and entering the stomach without giving rise to any further accident. The small opening in

the œsophagus made by the instrument would be insignificant, would not interfere with the passage of food, and would heal perfectly." In reproducing this in the *Revue*, we do not offer it as a novelty to our readers, we only wish to recall that Lafosse long ago suggested the breaking up of the foreign body by such a mode of procedure. So in his *Treatise on Pathology* 3rd vol., part i, p. 256, we read: "Division of the foreign body by means of crushing has been tried, but this is dangerous, since it injures the living tissues as well as the foreign body; it is preferable to use a cutting instrument. Thus, having made an incision on to the œsophagus we proceed by submucous cuttings, directed so as to divide the body into many pieces. Where this course is impossible, it is advisable to extract the body whole by simple incision, or, preferably, by a double incision, so performed that the wound in the fleshy coat is not against that of the mucous." In 1871 I successfully carried out this suggestion of M. Lafosse. A milch cow, belonging to a neighbour of the school, had just swallowed a potato and was threatened with asphyxia. The foreign body was of considerable size, and had become impacted at about the middle part of the cervical œsophagus. All means of extraction through the mouth having proved ineffectual, it was endeavoured to force it downwards. Only slight displacement resulted, and in the fear of not being able, on account of its volume, to pass it to the rumen, I ceased this means to have recourse to œsophagotomy. The œsophagus having been exposed, a straight bistoury was introduced by puncture into the thickness of the potato, and it was divided into four parts by cuts made towards the walls of the œsophagus. Cicatrisation occurred rapidly. Breaking up the foreign body by means of the straight bistoury requires to be done with great care to avoid injury of the opposite wall of the œsophagus. To render the operation easier and less dangerous we may, as M. Nocard suggests, use the probe-pointed and curved tenotomy knife, whose introduction should be preceded by that of the straight knife, as in the performance of plantar tenotomy. A probe-pointed bistoury would be equally effectual. In the case mentioned above an ordinary tenotomy blade would have been too short, and could not have been usefully employed. (F. Mauri.)

"*Poisoning of fifty Sheep by an Arsenical Bath*," by M. Beucler, of La Ferté-Sous-Jouarre. M. Offroy, farmer, at Corbois, having bought a lot of sheep in the spring of last year, at the May shearing perceived that many of them were affected with "scab." He had them dressed by the shep-

herd with tobacco boiled in water, but the disease progressed, and shortly all the sheep in the flock were more or less affected. He having consulted me in the month of October, I told him that the best means to employ against the affection was the arsenical bath, with which we had always hitherto succeeded in such cases. He instructed me to supply the necessary medicaments, and I ordered 20 kilogrammes of sulphate of zinc and 4 kilogrammes of arsenious anhydride from a druggist in Paris.

The proprietor having informed me that the shearing would take place on the 9th November, I came the next day at about 10 a.m. Two empty folds had been washed and strewed with fresh litter, to receive the sheep after they came from the bath, for it was too cold to turn them out in the court; the racks were filled with fodder. I dissolved 2 kilogrammes of arsenic in a chaldron of boiling water, and when the solution was completed, I added 10 kilogrammes of the salt contained in the bag, previously unopened, labelled "Sulphate of Zinc, 20 kilogrammes." I then completed the bath with sufficient cold and hot water to make 200 litres, with a temperature of 15° to 20° . Each sheep was then passed into the bath for about two minutes. On coming out, he was placed on a hurdle supported on an empty wash-tub to receive the drippings, and was while there wiped by means of a sweat scraper, then introduced into the prepared fold, which was next to that where the bath was placed. Between half-past nine and half-past eleven fifty-one sheep thus were bathed. This being dinner time the operation was interrupted. When we were going to recommence (at one p.m.), after the bath was ready, the proprietor and myself were astonished to find two sheep dead, five or six lying down, and almost all the others not feeding, though they had been left hungry before the operation. On examination of the most severely affected ones, which were motionless on the litter, with their heads turned round on the flank, I found the following symptoms:—Ears cold, conjunctiva injected, mouth warm, pulse small and quick, beats of the heart irregular, respirations accelerated, excrements normal. Autopsy of one of the dead ones showed me nothing abnormal in the abdominal cavity, for the stomach, liver, spleen, intestines, and bladder presented no trace either of inflammation nor of ecchymosis. The lungs, heart, and veins were filled with dark-coloured blood, which had not clotted. I immediately administered to some of the sheep milk, to others eggs, coffee, and warm wine; some also were carried into the kitchen, where a good

fire was burning ; but in spite of all care the number of victims increased so rapidly that by five p.m. only four sheep remained alive, of which two died in the night and two recovered. Thus, out of fifty-one sheep bathed forty-nine died in less than twenty-four hours. Some days after the proprietor, having applied some of the arsenical liquid, which had been preserved, by means of friction to the affected parts of two new sheep, these also succumbed. What could be the cause of this poisoning? I had done as I was accustomed to do, and I have never had an accident, though I have already subjected to the same treatment very nearly two thousand sheep belonging to different owners. Analysis of the solution, of which I knew only early in January last, showed that in place of sulphate of zinc it contained sulphate of soda. This must have been the cause of the accident, for the sulphate of zinc, acting as an astringent, is not absorbed and prevents absorption of the arsenic, whilst the solution of sulphate of soda, which acts on the skin the same way as on the mucous membrane of the stomach and intestines, though certainly with less intensity, is absorbed by endosmosis, together with the arsenic with which it is combined. The lesions which I met with were not nearly so complicated as those produced by arsenic introduced into the alimentary canal. Ought not the druggist to be responsible for the damage done under these circumstances? Hitherto the owner, whose animals I continue to attend, has not brought any action for damages.

M. H. Bouley, to whom the above was addressed, made it the subject of the following reflections:—"The most interesting observation which the exigencies of practice have allowed *M. Beucler* to make raises many questions, of which some ought to be studied, that they may have experimental solution. The first is the reactions which occur in the "regulation-bath of Teissier," in which the protosulphate of iron or sulphate of zinc are mixed with arsenic in the proportion of ten parts of the first salt or five parts of the second to one part of the acid. According to chemists of high position whom I have consulted on this point, a certain quantity of arsenite of iron or of arsenite of zinc (both insoluble salts) is formed in the bath, so that the combination of astringent salts with arsenic would not only prevent absorption of the toxic agent by the skin by constringing the pores and vessels of that membrane, but also would reduce the chances of poisoning by reducing to a smaller proportion the quantity of the toxic agent in solution in the bath. When sulphate of soda is substituted for the corre-

sponding iron or zinc salt no chemical reaction occurs with the arsenic, which therefore retains the full power of its action, all the arsenic prescribed remaining dissolved in the bath. On the other hand, the skin, instead of being closed to absorption, is predisposed to it by the action of warm water, which clears its surface and dilates its vessels. We may also suggest the question whether the sulphate of soda does not exercise upon the sebaceous material an emulsifying action, which removes from the skin the fatty protecting layer which covers it, and thus also favours its penetration by the arsenical solution. It would be even possible, according to *M. Thenard*, that another condition serving to increase the toxic properties of the arsenico-soda bath would be found in the much more marked capacity for solution of arsenious anhydride by soda solution than by ordinary water. But here arises a physiological question—whether the fatal accidents which occur among fifty sheep in the conditions mentioned by *M. Beucler* result solely from cutaneous absorption. It has been proved by direct experiment that the absorption of toxic agents dissolved in a bath may occur through the skin, but the absorbing power of the skin is very limited; and as, in the case before us, the accidents occurred very rapidly, following a bath of very short duration, and in a very short time terminated in the death of almost all the animals immersed, we may ask whether the cause of death entered solely through the skin; without doubt the skin of the sheep is very delicate, and the abrasions and the local state of congestion determined by the action of the acari constitute conditions favorable to absorption. But these are only inductions, and if an action for damages is to be commenced against the druggist who committed the error of substituting sulphate of soda for sulphate of zinc in preparation of a bath for sheep-scab, the action must be based on proofs, not on inductions. Therefore, on the occasion of the very interesting fact brought forward by *M. Beucler*, we must resolve the following questions:

1st. The explanation of the reactions which are produced in the Teissier bath composed, according to the formula of Teissier himself, arsenic and sulphate of iron; or, as modified by Clément, arsenic and sulphate of zinc. It is remarkable that of this matter there is no explanation in any of the works which treat of the arsenical bath. Teissier simply prescribes the formula without giving the reasons which have led him to combine together the medicaments of which it is composed. And since the publication of his *Treatise on Sheep*

(1840) all the works on the subject have simply reproduced Teissier's formula, without commentary and without explanation. The question of what are the exact changes which occur in the bath when the ingredients are combined together and during combination submitted to the action of heat ought to be carefully studied. In what proportions does the insoluble arsenite of iron and zinc form? And in what proportions does the water of the bath afterwards contain arsenic? Does the insoluble arsenite, held in suspension in the water of the bath, exercise any toxic action on the acari, efficacious in their destruction, and, therefore, is it of therapeutic value for sheep-scab? These points must be studied experimentally.

2nd. What occurs in the solution of arsenious anhydride when sulphate of soda is mixed with it instead of sulphate of iron or of zinc? Is the arsenic dissolved more readily in sulphate of soda solution than in ordinary water? Does it form some arsenite of soda? Does the solution of sulphate of soda exert an emulsionifying action on the sebaceous secretion of the skin?

3rd. Given an arsenical soda bath, can it prove poisonous to sheep by cutaneous absorption? In other words, is the absorbent power of the skin such, in the ovine species, that fatal toxic accidents may occur in animals of this species in consequence of their immersion in an arsenical soda bath during the short time which the treatment of scab requires? And, supposing such a bath inoffensive for sheep with healthy skins, is it so for those on the skins of which acari have determined special lesions which are characteristic of them, and give rise, by the itching which they occasion, to the abrasions resulting from friction?

4th. Finally, supposing that fatal accidents occur after immersion in the arsenical soda bath used with all necessary care to prevent absorption through any other channel than the skin, one more experiment ought to be made before death by poisoning is proved—demonstration of the presence of arsenic in the viscera?

From this we see how wide and complex is the question which the practical fact observed by M. Beucier brings up, and all the researches which would have to be undertaken to furnish the tribunal with a sure case, if an action for damages were brought against the pharmacist by whose error the sulphate of soda was substituted for sulphate of zinc in the arsenical bath of which M. Beucier had given the ordinary formula."

"Typhoid Fever of Man attributed to the use of Diseased

Meat.—In Switzerland has recently been decided an action which raises an important hygienic question, and a question of medical doctrine which is very obscured and very much debated. The intimate cause of typhoid fever is not exactly determined; we know that bad hygienic conditions, insufficient nourishment and crowding favour its extension, and, under certain conditions, cause development of true epidemics. The question was presented from another point of view before the Zurich Tribunal as follows:—On the 30th May, 1878, a certain number of young people, male and female, met together at Klosen for a competition. There were assembled there nearly seven hundred singers, who partook of a luncheon, and of a dinner officially served by a neighbouring innkeeper. At that simple dinner were served soup, *bouilli*, roast veal, and sausages. Five or six days after that fête more than half of those who took part in it fell sick; also in the village of Klosen a number of families had sick children and adults. The outbreak of a disease affecting a great number of the partakers of the banquet gave rise to suspicions of poisoning. It was thought the disease resulted from the use of damaged meat or from poisoning by sausages, which have often given rise to affections sufficiently serious to render such foods suspicious. But soon the doctors of the place and Professor Huguenin, of Zurich, recognised that they were suffering from an epidemic of typhoid fever of so severe a character that about five hundred people were affected, and of them about one hundred died. The details left no doubt of this—symptoms, progress, *post-mortem* lesions all being of the ordinary typhoid character. This event gave rise to considerable disquietude, many inquiries were ordered by the cantonal council, and all tended to attribute the outbreak to the banquet. On their part M. Huguenin and his assistant, M. Walder, studied the various cases attentively, and endeavoured to ascertain the relations between the outbreak and ingestion of damaged meat. Things thus happened: The innkeeper who provided the banquet is also a butcher and sausage-maker. Two days before the fête he had received meat passed as healthy by the veterinary inspectors, but at the same time a butcher of the neighbourhood had handed over to him a quantity of meat from a beast slaughtered out of the town, which had been sick for some time. This had not been inspected. It is probable that that meat, either itself or in consequence of the alteration which it brought about in the healthy meat with which it was brought in contact originated the disease in all these wassailers. A dog, they say, who had eaten the bones of the calf was sick

for many days. Nothing would be more natural than to attribute the epidemic to this originating cause, and such a conclusion is rendered the more plausible, since neither in Klosen nor in the neighbouring localities for many years had there been any cases of typhoid fever ; nevertheless, this view was received with incredulity by the inhabitants and the patients, and with hesitation even by many of the physicians. Indeed, nothing very precise is known concerning typhus of the ox, for the so-called typhus of horned cattle has nothing in common with the disease of the same name as it occurs in man. The two doctors above named applied themselves with care to elucidate this point also, and, if the proofs which they bring forward are not absolutely convincing, they are at least sufficient to give their theory a basis and to draw the attention of practitioners to it. When the epidemic occurred and during its progress Dr. Walder heard about some calves which had fallen ill in the houses where the affected persons dwelt, many needed to be destroyed. He carefully examined the viscera of one of them, and observed lesions in every respect identical with those of typhoid fever, which I need not enumerate here. The conditions under which these animals were attacked by the disorder negatives any idea of transmission by other quadrupeds ; so Walder supposes this transmission occurred by the infection resulting from direct contact with diseased persons, with clothes, or ejecta.

Only one question remains undecided, and Dr. Walder can only suggest it without answering it for all cases. But he thinks with M. Huguenin, that the epidemic of Klosen was a direct infection from ingestion of the flesh of animals suffering from typhus. This is the second time within 40 years that Switzerland has been the seat of such an accident ; in 1839, another village some little distance from Klosen (Andelfingen), suffered from an exactly parallel outbreak. Then it also originated at the meeting of a large number of young persons at a fête ; out of 700 persons, 440 fell sick, among them 74 children ; happily, only 10 died. For some years hygienists have tended to compare the diseases of the lower animals with those which affect man, and to trace the development of the latter from the former ; this tendency is very pronounced in epidemic disorders, and tends to increase daily. It is not advisable to conceal the fact that they evidently have very close relations, but care must be taken not to advance too rapidly and fall into rash hypotheses, but when facts of a well marked character, such as those which have been observed

in this epidemic, are noted, we are obliged to admit the evidence. The solution of such problems would facilitate prophylactics, and perhaps extinguish even serious diseases.

ON PLANTS IN RELATION TO ANIMALS.

By Professor JAMES BUCKMAN, F.G.S., F.L.S., &c.

WHOEVER is professionally engaged in regulating the well-being of the animal economy, whether he be a physician in attendance upon the higher animal *man*, or one whose profession is to study the health of those lower creatures subject to man's control, will find that somehow or other plants will have to be studied and thought about at every turn.

If for a moment we reflect upon the thousands of forms in the vegetable kingdom which the practitioner has to deal with, either as food or medicine, we shall be led to conclude that a practical acquaintance with plants is a necessity alike for the physician and the veterinarian.

Now, as plants are everywhere around us, we purpose to direct attention to such forms as can readily be got at, dwelling more particularly upon the more important natural orders, and pointing out chiefly from our native flora the more salient points in their structure and classification, while we direct particular attention to those in which we are more immediately concerned in their relation to the economy of animals.

We have ever found that the study of an order at a time is the quickest way of impressing the general facts of botanical science upon the memory, while the practical details connected with their indications and uses serve to impress the student with the utility of the science which professes to explain them.

Bearing these views in mind, then, we commence with a review of the wild plants of our fields which, from being allied to the *ranunculus* or buttercup, have been collected into a natural order called—

RANUNCULACEÆ.

In as far as our native species are concerned, this order presents us a very varied series, mostly of herbaceous plants agreeing in the following points. Both the stamens and pistils are numerous, the former are distinct and situate beneath the ovaries, while the latter are separate through their whole length.

At present we shall illustrate the order by directing attention to our wild species of buttercup—

Genus—*RANUNCULUS*, *Linn.*

Sepals generally 5 (rarely 3), caducous; petals 5 or more (up to 15), with a nectariferous pore at the claw, covered by a small scale, or simply with an elevated border on the lower side; stamens indefinite, or sometimes definite; achenes in several rows, forming a globular, ovoid, or oblong head, and apiculate or rostrate by the persistence of the short style or its base.

The British species have all yellow or white flowers.*

The white forms are aquatic, and of these Mr. Syme has figured 12; whilst of the yellow species 13 are figured.

Bentham, however, has only figured 2 forms of the water crowfoot or ranunculus, viz.:

R. aquatilis, water *R.*

„ *hederaceus*, ivy-leaved *R.*

Of the former he says:—“Many of the forms it assumes are striking and have been distinguished as species, but the characters, although often to a certain degree permanent, appear at other times so inconstant, and even to depend so much on the situation the plant grows in, that we can only consider them as mere varieties.”†

The next form this author considers as closely allied to the *aquatilis*, but it seems never to grow otherwise than on flat mud banks, and hence its ivy-shaped leaves never take on the finely cut segments which more or less characterise all the floating forms; but even in some of these, cordate, ivy-leaved, or tripartite leaves, will be found intermixed with the finer segmental forms.

The water crowfoot is found in most running streams, whilst its varieties inhabit lakes, ponds, and wet places in general; it is eaten by cattle, and from the following account it may be considered to be not only harmless but wholesome:

“The pretty water crowfoot, *Ranunculus aquatilis*, common on most neglected pools and sluggish streams, with three-lobed floating leaves; much divided, almost hair-like submersed ones, and white flowers with a yellow middle; is an exception to the general character of the genus, being quite harmless, at all events to cattle. Along the banks of the Hampshire Avon, and other places in the same neighbour-

* See new edition of ‘English Botany,’ vol. i, p. 16.

† ‘Illustrated Handbook of the British Flora,’ vol. i, p. 11.

hood, it is used by the peasantry as fodder. They collect it in boats and give it to their cows and horses, allowing the former about twenty to thirty pounds a day. One man is said to have kept five cows and a horse with little other food but what they could pick up on the heath, using no hay but when the river was frozen. Hogs eat it, and will live upon it alone until put up to fatten. A little alpine species found on the Norwegian Fjelds, *R. glacialis*, is known there as the reindeer plant, from the partiality of that animal for it; it is a strong sudorific, but cannot possess much acridity. It may be remarked that all species of buttercup are inert when dried with hay, as the active principle, like that of the anemone, is volatile, and dispelled altogether by heat and exposure to the air.

Whether there is any difference in quality depending upon the fact of fully developed leaves or otherwise is uncertain, but it is highly probable. Anyhow it is a curious circumstance that growth in water should so modify active properties that the aquatic division of the genus should thus become inert.

The yellow division contains five species to which we may now direct attention; they are as follows:—

1. *Ranunculus acris*—upright buttercup.
2. ,, *bulbosus*—bulbous buttercup.
3. ,, *repens*—creeping buttercup.
4. ,, *ficaria*—pilewort buttercup.
5. ,, *arvensis*—corn crowfoot.

1. *Ranunculus acris*, upright buttercup.—Acrid by pre-eminence, this favourite flower grows everywhere; and although its bright colour and hardy growth render it familiar to everyone, care must be had to its irritating and poisonous qualities. It is said that even pulling up the plant with bare hands and carrying it some distance has produced inflammation in delicate skins. We know of foolish children who, having eaten the bright yellow flowers and green leaves, were made extremely ill thereby. Cattle in general will not feed on it, but sometimes, when hungry, they have been turned into a field of buttercups, and having eaten them, their mouths have become sore and blistered. According to Linnæus, cows, horses, and pigs refuse it; but goats and sheep will eat it. When made into hay its noxious qualities are lost.

Poetically, the associations of this plant are numerous. An old author introduces it as emblematical of the manhood of months:—"June is drawn in a mantle of dark-green

grass, and upon his head a garland of bents, kingcups, and maidenhair."

Another more modern author says :

"Here's a king-cup of gold brimming over with dew,
To be kissed by the lips just as fresh as its own."

Gay, the poet, tells us :

"Fair is the king-cup in meadow that blooms."

In the 'Shepherd's Oracles' we are told it was worn by lovers at betrothing time; and its golden colour was dedicated to Hymen in more classical history. Old Quarles says :

"Love-sick swains compose rush-rings and myrtle-berry chains,
And stuck with glorious king-cups in their bonnets,
Adorned with laurel slips, chaunt their love sonnets."

A variety of this plant has become double, and long been an inhabitant of gardens under the name of bachelor's, buttons; in French, *Bouton d'or*.

This species is common to damp meadows, and is by some farmers looked upon as an evidence of good land; but when it is considered that stock uniformly refuse it, and it therefore looks dissightly in a pasture, it ought by no means to be encouraged as it interferes with the growth of the grasses and other wholesome fodder plants.

As the cattle do not eat the plant it seeds most readily, so that the constant use of a field for pasturage greatly encourages the growth of this weed. We have lately employed the new Koldmoos weeder, which very quickly takes off the heads of flowers and seeds, and so far prevents the spread of the plant.

Otherwise, merely skimming over a field with the scythe will prevent further mischief.

It is stated that the acrid crowfoot is harmless in hay, but if the hay be well and expeditiously made there is no doubt but that some of the acrid matter would be retained; but any how, if harmless, we at the same time conclude it to be useless and innutritious, and therefore there can be no excuse to encourage the growth of a plant that merely takes room and dilutes the quality of the hay without adding to its quality.

2. *Ranunculus bulbosus*, bulbous crowfoot or buttercup.—This is for the most part a denizen of the dry, arid, poor pasture. It is distinguished by reflexed sepals and a bulboid root-stock. This latter is eagerly sought after by pigs, but it is reported that the stimulation causes soreness to the

animals' noses. It is not so acrid as the former species, and cattle and horses will eat it down when young, at the same time it is no favourite with any animal; and though, like the former, it is said by ignorant people to give the desired yellow colour to butter; there is reason to believe this to be quite a myth.

Johnston says that "the common species, *R. acris*, *bulbosus*, and *repens* have been employed as vesicatories in the absence of better applications; they are, however, somewhat uncertain in their action and difficult to heal."

3. The *Ranunculus repens*, creeping crowfoot or ranunculus, is common to ditches and damp places; it is distinguished by its creeping scions, which readily root and so soon spread to great patches.

This plant has also become a denizen in our arable fields, where the husbandman recognises it in its early growth under the name of "ram's claws." It spreads very rapidly in a field, both by means of scions and seeds, and hence it is important that it should not be sown; but this is constantly being done in grass and other seeds, and hence it is important to look out for the small flat, beaked capsule of the buttercup, and not to purchase if it be contained in the sample.

4. The *Ranunculus ficaria*, the figwort or pilewort buttercup, derives its name of figwort from the fig-shaped tubers of the root, which, from their peculiar form, have been employed on the doctrine of signatures for that troublesome complaint known as piles, the tubers of which are simulated by the root tubers.

A stimulating ointment is made from the whole plant, which at all events, if not used specially for piles, still forms the basis for mixing some more active materials, such as pepper, opium, &c.

It is said to be wholesome when cooked, but we cannot recommend it for any good quality.

5. *Ranunculus arvensis*, corn crowfoot, is distinguished from the rest by its peculiarly muricated seed vessels. It is perhaps one of the most acrid of the whole tribe. It occurs very commonly in corn crops on heavy or dry lands. The common name for this plant is that of "hunger weed," as its presence indicates a degree of poverty in the soil, or at any rate where it prevails to any great extent, it shows a want of clean farming.

Mrs. Lankester tells us that "this is one of the most virulent of the ranunculus family, and it is said to be very dangerous to cattle, although they greedily eat of it

M. Brugnon, who has given a particular account of its qualities, relates that three ounces of its juice killed a dog in four minutes. Near Turin several sheep were killed by eating it, which first led to an investigation of its effects. Colic, with inflammation of the stomach, were the symptoms which were best removed by pouring vinegar down the animals' throats. This poison seems to act in paralysing the nerves of the stomach, and also in an acrid ulcerating effect, as dark spots were found in the stomach of the sheep.

There is reason to think that, as regards our domestic animals, what is termed inflammation may often be due to acrid plants, and we can quite believe that a small quantity of this plant would produce serious inconvenience.

SEPTICÆMIA IN ANIMALS.

Remarks by Professor WALLEY, Principal at the
Veterinary College, Edinburgh.

I OBSERVE in the last issue of the *Veterinarian* (p. 526) the following statement from the pen of Mr. Tedbar Hopkin.

"That it (septicæmia) is not caused by carelessness in operating, as the public generally suppose, will be proved by the fact that Professor Williams told me that every colt operated on (castration) and kept in proximity to a dissecting room died."

Such a statement (made in good faith by Mr. Hopkin) is calculated to mislead, and, seeing that extracts from our professional journals frequently find their way into lay publications, may sometimes be turned to advantage by a malicious and cantankerous client in urging a claim for damages against an unfortunate operator.

Whatever may have been the experience of others as to the danger of operating in the neighbourhood of dissecting rooms, I can only say that every animal castrated by my colleague, Mr. Baird, and myself, in the college premises, has made a splendid and rapid recovery; indeed, only one case of septicæmia, following an operation (out of great numbers of animals operated upon) has occurred; and that after a severe operation on that most dangerous of all structure, diploë of bone, in the lower jaw.

Comparatively few cases of septicæmia follow integumental or muscular wounds in our patients; the great majority arise from feet injuries and suppurative lung affections.

I believe that the dissecting room and loose boxes of this

Institution occupy the same relative positions as they did at the time to which Mr. Hopkin particularly alludes.

A REMARKABLE CASE OF RUPTURE OF THE DIAPHRAGM AND STOMACH.

By STEPHEN BEESON, Jun., M.R.C.V.S., Harrogate.

ON Thursday, July 3rd, I was called to a bay carriage-horse, which was suffering from abdominal pain. He had taken his food as usual in the morning, and was afterwards driven a journey of fourteen miles, but had refused both food and water on the journey.

On reaching home he seemed uneasy, and as the pain did not pass off my attention was called to him. I found him walking round the box, evidently in continuous pain. The pulse, however, was only 42, the breathing very little disturbed, and the surface of the body and extremities warm. His appetite was quite gone.

The symptoms appeared to yield to the treatment adopted, but the next morning great constipation of the bowels was present, and the conjunctival membrane was much injected; still the pulse was not more in number than on the preceding day, and the breathing remained natural. Although every means possible was tried, yet the constipation did not yield in the least.

From Friday to the following Tuesday very little alteration took place. He still refused everything in the way of food, except a little grass, of which he took only a very small quantity, nor would he take drink of any kind. On Tuesday night the pulse rose; but, except occasionally, the breathing still continued normal. Wednesday morning both pulse and breathing were now excited, and by night the countenance became haggard and the breathing greatly increased.

He died at 8 o'clock on Thursday morning, having lived just a week, during which time he had apparently not suffered much pain. Most certainly he had never shown throughout his illness any indications of violent pain, nor had he been seen to be in a position which was likely to produce the extraordinary lesions which were found on *post-mortem* examination.

On opening the abdomen the first thing noticed was an escape of alimentary matter. The bowels being removed, a large quantity of dark-coloured fluid was found in the

abdomen, on the top of which floated some linseed oil, which had been given a day or two previously. On attempting to remove the stomach it was found to have passed through a rent in the diaphragm into the chest, and when extricated from its position it was also found to be ruptured. The edges of the lacerations, both in the diaphragm and stomach, were much thickened and congested.

A large quantity of the omentum had also passed into the chest, and this also was black from strangulation, and bordering on mortification.

The lungs were only slightly congested, and the heart was healthy and well developed. All the other organs were also healthy.

On making inquiry as to any accident which might have occurred to the animal, I was told that on the Thursday morning on which he was taken ill, he was found in the stable sitting on his haunches with the halter shank broken, and that a noise had been heard in the stable during the night as if he was struggling.

Any remarks you may think proper to make on the case will be esteemed a favour.

[From time to time cases of rupture of the diaphragm are brought to notice, which would seem to justify an opinion of the lesion having existed for some days prior to death. Such is the one recorded by Mr. Beeson. We do not, however, opine that in this instance the diaphragm was actually ruptured at the time the horse started on his journey; but that the pain he experienced during the preceding night, his refusal to take food on the journey, the recurrence of the abdominal pain on his return, the unyielding constipation, &c., depended on indigestion. The journey added doubtless to the impaired power of the stomach to perform its functions, and probably the diaphragm, by the pressure of the stomach against it, thus became more liable to the giving way of its fibres. Slowly did they yield, and the laceration become complete.—Eds.]

EPILEPSY, AND ITS SUCCESSFUL HOMŒOPATHIC TREATMENT IN DOGS.

By SAMUEL GILL, M.R.C.V.S., Hastings.

ON April 29th I was sent for to go immediately a distance of two miles to see a pug-dog suffering from fits. He had had these continuously day by day for three months.

Treatment.—Tinct. Rhus, three-drop doses every three hours.

May 13th.—Slightly improved. Tinct. Cuprum, three-drop doses every three hours.

— 19th.—Very much improved, only one fit in the twenty-four hours.

— 20th.—Ordered Tinct. Belladonna, three-drop doses three times a day.

The diet consisted of the plainest and simplest nourishment, all hard and indigestible food being withheld.

June 21st.—A letter received from the owner contained the following remark :—"The pug-dog is perfectly well and has had no return of fits."

This case was placed in the first instance in the hands of an unqualified man (assuming the title of M.R.C.V.S.) who ordered the animal to be killed.

DEATH OF A COW FROM THE PRESENCE OF A NEEDLE IN THE VICINITY OF THE HEART.

By FREDERICK L. GOOCH, Veterinary Student.

I WAS requested on the 14th April to attend to a red short-horn cow, the property of Major Micklethwaite, of Taverham Hall, Norfolk. On examination I found that the animal was greatly emaciated, the milk much decreased in quantity, and the appetite diminished. The pulse also was weak, but the temperature was normal. She did not ruminate, and a slight groaning accompanied the respiration.

Treatment.—Vegetable tonics with diffusible stimulants were administered, but very little benefit, except that rumination returned for a short time. At different times she was very much constipated, to relieve which aperients were administered. After attending her for about a fortnight a slight improvement was observed, and I did not see her again for some time.

About the 6th or 7th of June I was again called in, when I found her much more emaciated, and all the symptoms greatly aggravated. She gradually became worse, and about the 10th she died. There were no indications of violent disease until about three days before her death.

On a *post-mortem* examination being made, a *large sacking needle* about four inches long, was found to have pierced the diaphragm and the parietal pericardium. The eye of

the needle was about a quarter of an inch from the muscular walls of the heart. A large abscess was situated close to the seat of the needle, and when opened about a pint of purulent matter escaped. The pericardium was also much thickened, especially near to the part where it had been pierced. The liver and spleen were spotted all over and there were several small abscesses in different parts of the viscera.

Pathological Contributions.

CATTLE PLAGUE.

THE report of an outbreak of cattle plague in the Baltic Province of Courland has been contradicted. It is stated that the disease was proved to be a malignant form of catarrhal fever.

A recent report states that cattle plague is committing great ravages in Egypt in the province of Ghirgheh and Assiront. The mortality among cattle in the two provinces is said to have reached a total of nearly 10,000 head. Numbers of sick animals were seen at the cattle fair at Ghizeh on July 6th. It is also reported that measures have been taken to obtain a competent staff of veterinary surgeons to take the necessary measures in regard to prevention.

According to the reports which have been received from Russia, cattle plague exists in the provinces of Bessarabia, Volhygnia, Ekaterivooslau, Taurida, and Kherson.

Galiccia is reported to have remained free from cattle plague since July 6th.

PLEURO-PNEUMONIA.

THE reports from the Netherlands are very satisfactory in respect of the diminution of the number of cases of pleuro-pneumonia.

From May 18th to June 14th there were in South Holland in ten districts 36 cases of the disease reported; in North Holland there was only one case, making a total of 37 cases in eleven districts.

The report for the following month announces that only four cases of pleuro-pneumonia were returned for the whole kingdom.

Pleuro-pneumonia is reported to have existed in Switzerland in the Canton Lucerne,

THE CONTAGIOUS DISEASES (ANIMALS) ACT, 1878.

RETURN of the NUMBER of PLACES in GREAT BRITAIN upon which Contagious or Infectious Disease (except Sheep-Scab) has been reported to have existed during the Week ended July 12th, 1879, with particulars relating thereto.

PLEURO-PNEUMONIA.

| | Farms or other Places. | | | | Cattle attacked. | | Diseased Cattle. | | | | Cases which existed in previous Weeks not reported until this Week. | |
|--|--|---|---|--|---------------------------|--|------------------|-------|------------|------------|---|------------------|
| | Number reported upon this Week which have been previously reported upon. | Number upon which Fresh Outbreaks have been reported to have taken place during the Week. | Total Number reported upon during the Week. | Remaining diseased from the previous Week. | Attacked during the Week. | | Killed. | Died. | Recovered. | Remaining. | Fresh Outbreaks. | Cattle attacked. |
| ENGLAND. | | | | | | | | | | | | |
| COUNTY.* | | | | | | | | | | | | |
| Buckingham | 1 | 1 | 2 | .. | 1 | | 1 | .. | .. | .. | .. | .. |
| Cambridge (ex. Liberty of the Isle of Ely) | 2 | .. | 2 | .. | 1 | | 1 | .. | .. | .. | .. | .. |
| Chester | .. | 1 | 1 | .. | 1 | | 1 | .. | .. | .. | .. | .. |
| Cumberland | 7 | .. | 7 | .. | 6 | | 6 | .. | .. | .. | .. | .. |
| Derby | 7 | 1 | 8 | .. | 7 | | 7 | .. | .. | .. | .. | .. |
| Essex | 9 | 2 | 11 | 2 | 5 | | 6 | .. | .. | 1 | .. | .. |
| Kent (ex. Metropolis) | 3 | .. | 3 | .. | 2 | | 2 | .. | .. | .. | .. | .. |
| Lancaster | 16 | .. | 16 | .. | 2 | | 2 | .. | .. | .. | 1 | 1 |
| Leicester | 7 | .. | 7 | .. | 1 | | 1 | .. | .. | .. | .. | .. |
| Lincoln, Parts of Lindsey | 1 | .. | 1 | .. | .. | | .. | .. | .. | .. | .. | .. |
| Middlesex (ex. Metropolis) | 4 | .. | 4 | .. | .. | | .. | .. | .. | .. | .. | .. |
| Northampton (ex. Soke of Peterborough). | 8 | 1 | 9 | .. | 2 | | 2 | .. | .. | .. | .. | .. |
| Notts | 3 | 1 | 4 | .. | 3 | | 3 | .. | .. | .. | .. | .. |
| Salop | .. | 2 | 2 | .. | 3 | | 3 | 1 | .. | 1 | .. | .. |

| | | | | | | | | | | | | | |
|--------------------------------------|-----|----|-----|----|----|----|----|----|----|----|----|----|----|
| Stafford | 1 | 3 | 4 | .. | 4 | 3 | .. | 3 | .. | 1 | .. | .. | .. |
| Suffolk | 1 | 1 | 2 | 1 | 1 | 1 | 1 | .. | .. | .. | .. | .. | .. |
| Surrey (ex. Metropolis) | 1 | 1 | 1 | .. | 1 | .. | .. | .. | .. | 1 | 1 | 1 | .. |
| Worcester | 3 | .. | 3 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. |
| York, East Riding | .. | 1 | 1 | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. |
| " North Riding | 1 | .. | 1 | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. |
| " West Riding | 19 | 6 | 25 | 1 | 10 | 10 | 1 | 1 | 1 | .. | .. | .. | .. |
| Liberty of the Isle of Ely | 2 | 1 | 3 | .. | 1 | .. | .. | .. | .. | 1 | .. | .. | .. |
| The Metropolis | 4 | 3 | 7 | .. | 6 | 5 | .. | .. | .. | 1 | .. | .. | .. |
| SCOTLAND. | | | | | | | | | | | | | |
| COUNTY.* | | | | | | | | | | | | | |
| Aberdeen | 10 | .. | 10 | 2 | 4 | 6 | .. | .. | .. | .. | .. | 1 | 1 |
| Edinburgh | 6 | 1 | 7 | .. | 3 | 2 | .. | .. | .. | 1 | .. | .. | .. |
| Fife | 7 | .. | 7 | .. | 6 | 5 | .. | .. | .. | 1 | .. | .. | .. |
| Forfar | .. | 1 | 1 | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. |
| Kinross | 2 | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Perth | 2 | .. | 2 | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. |
| Renfrew | 2 | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Roxburgh | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Stirling | 1 | .. | 1 | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. |
| TOTAL | 131 | 26 | 157 | 6 | 75 | 70 | 2 | .. | 9 | 2 | 2 | .. | 2 |

FOOT-AND-MOUTH DISEASE.

| | Farms or other Places. | | | Animals attacked. | | Diseased Animals. | | | | Cases which existed in previous Weeks not reported until this Week. | |
|------------------------------|--|---|---|--|---------------------------|-------------------|-------|------------|------------|---|-------------------|
| | Number reported upon this Week which have been previously reported upon. | Number upon which Fresh Outbreaks have been reported to have taken place during the Week. | Total Number reported upon during the Week. | Remaining diseased from the previous Week. | Attacked during the Week. | Killed. | Died. | Recovered. | Remaining. | Fresh Outbreaks. | Animals attacked. |
| ENGLAND. | | | | | | | | | | | |
| COUNTY.* | | | | | | | | | | | |
| Berks . . . Liberty of the | 1 | ... | 1 | 5 | ... | ... | 2 | 1 | 2 | ... | ... |
| Cambridge (ex. Isle of Ely). | 11 | 1 | 12 | 1638 | 120 | ... | ... | 84 | 1674 | 3 | 1067 |
| Hants . . . | 1 | ... | 1 | 3 | ... | ... | ... | 3 | ... | ... | ... |
| Kent (ex. Metropolis) | ... | 2 | 2 | ... | 8 | ... | ... | ... | 8 | ... | ... |
| Lancaster . . . | 1 | ... | 1 | 1 | ... | ... | ... | 1 | ... | ... | ... |
| Salop . . . | 1 | ... | 1 | 1 | ... | ... | ... | 1 | ... | ... | ... |
| Warwick . . . | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Wilts . . . | 1 | ... | 1 | 4 | 13 | ... | ... | ... | 17 | ... | ... |
| York, East Riding . . . | 1 | ... | 1 | 3 | ... | ... | ... | ... | 3 | ... | ... |
| TOTAL . . . | 18 | 3 | 21 | 1655 | 141 | ... | 2 | 90 | 1704 | 3 | 1067 |

GLANDERS.

| GLANDERS. | | | | | | | | | | | | |
|----------------------------|-----|-----|-----|---|------------------|-----|------------------|-----|-----|-----|-----|------------------|
| | | | | | Horses attacked. | | Diseased Horses. | | | | | Horses attacked. |
| | | | | | | | | | | | | |
| ENGLAND.—COUNTY.* | | | | | | | | | | | | |
| Buckingham | 1 | ... | ... | 1 | 3 | ... | ... | ... | ... | ... | ... | ... |
| Chester | ... | ... | ... | 3 | 2 | ... | ... | ... | ... | ... | ... | ... |
| Hants | 1 | 1 | ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... |
| Hertford. | 1 | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Lincoln, Parts of Kesteven | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Middlesex (ex. Metropolis) | 1 | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Stafford. | ... | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Warwick | 1 | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Worcester | 1 | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Stoke of Peterborough | 1 | ... | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| The Metropolis | 4 | 9 | 13 | 1 | 14 | 15 | ... | ... | ... | ... | ... | ... |
| TOTAL | 11 | 15 | 26 | 4 | 21 | 21 | ... | ... | ... | ... | ... | ... |

FARCY.

| ENGLAND.—COUNTY.* | | | | | | | | | | | | |
|----------------------|-----|-----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Hertford | 2 | ... | 2 | 2 | ... | ... | ... | ... | ... | 1 | ... | ... |
| Kent (ex Metropolis) | 1 | ... | 1 | 1 | ... | ... | ... | ... | ... | 1 | ... | ... |
| Sussex | 2 | ... | 2 | 1 | ... | ... | ... | ... | ... | 1 | ... | ... |
| Warwick | ... | 1 | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... |
| The Metropolis | 3 | 3 | 6 | 4 | 5 | 5 | ... | ... | ... | 4 | ... | ... |
| TOTAL | 8 | 4 | 12 | 8 | 6 | 6 | ... | ... | ... | 7 | ... | ... |

SWINE FEVER.

| | Farms or other Places. | | | Swine attacked. | | Diseased Swine. | | | | Cases which existed in previous Weeks not reported until this Week. | |
|----------------------------|--|---|---|--|---------------------------|-----------------|-------|------------|------------|---|-----------------|
| | Number reported upon this Week which have been previously reported upon. | Number upon which Fresh Outbreaks have been reported to have taken place during the Week. | Total Number reported upon during the Week. | Remaining diseased from the previous Week. | Attacked during the Week. | Killed. | Died. | Recovered. | Remaining. | Fresh Outbreaks. | Swine attacked. |
| ENGLAND. | | | | | | | | | | | |
| COUNTY.* | | | | | | | | | | | |
| Bedford . | 2 | 1 | 3 | 7 | 7 | 12 | 2 | ... | ... | 1 | 7 |
| Berks . | 2 | ... | 2 | 12 | 6 | 16 | 2 | ... | ... | 1 | 12 |
| Chester . | 1 | ... | 1 | 2 | 2 | 3 | 1 | ... | ... | 1 | 2 |
| Derby . | 2 | 1 | 3 | ... | 4 | 4 | ... | ... | ... | ... | ... |
| Devon . | 1 | ... | 1 | 4 | ... | ... | 2 | ... | 2 | ... | ... |
| Dorset . | 4 | 1 | 5 | 29 | 1 | ... | 5 | ... | ... | 1 | 7 |
| Essex . | 1 | 3 | 4 | ... | 18 | 25 | 4 | ... | 7 | ... | ... |
| Gloucester | 1 | 4 | 5 | 5 | 12 | 15 | 2 | ... | ... | ... | ... |
| Hants . | 1 | 3 | 4 | 1 | 3 | 2 | 1 | ... | 1 | ... | ... |
| Hertford | 1 | 1 | 2 | ... | 13 | 10 | 3 | ... | ... | ... | ... |
| Huntingdon | ... | 1 | 1 | ... | 2 | 2 | ... | ... | ... | ... | ... |
| Lancaster | 1 | 1 | 2 | ... | 1 | 1 | ... | ... | ... | ... | ... |
| Leicester | 1 | ... | 1 | 2 | ... | 1 | 1 | ... | ... | ... | ... |
| Middlesex (ex. Metropolis) | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |

| | | | | | | | | | | | | | | | | | |
|--|---|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Monmouth | . | . | . | 1 | ... | 1 | 6 | ... | 6 | ... | 8 | ... | ... | ... | ... | ... | ... |
| Norfolk | . | . | . | 1 | 9 | 10 | ... | 47 | 39 | ... | ... | ... | ... | ... | ... | ... | ... |
| Northampton (ex. Soke of Peterborough) | . | . | 5 | 5 | ... | 5 | 9 | 1 | 10 | ... | ... | ... | ... | ... | ... | ... | ... |
| Notts | . | . | ... | ... | 1 | 1 | ... | 6 | 5 | ... | 1 | ... | ... | ... | ... | ... | ... |
| Salop | . | . | 1 | 1 | ... | 6 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Somerset | . | . | ... | ... | 6 | 6 | ... | 30 | 9 | ... | 5 | ... | 16 | ... | ... | 11 | ... |
| Stafford | . | . | 1 | 1 | 2 | 3 | 5 | 10 | 12 | ... | 3 | ... | ... | ... | ... | 5 | ... |
| Suffolk | . | . | 3 | 3 | 3 | 6 | ... | 35 | 35 | ... | ... | ... | ... | ... | ... | ... | ... |
| Surrey (ex. Metropolis) | . | . | ... | ... | 1 | 1 | ... | 6 | 1 | ... | 2 | ... | 3 | ... | ... | ... | ... |
| Sussex | . | . | 2 | 2 | ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Warwick | . | . | ... | ... | 3 | 3 | ... | 7 | 6 | ... | 1 | ... | ... | ... | ... | ... | ... |
| Wilts | . | . | ... | ... | 7 | 7 | ... | 12 | 10 | ... | 1 | ... | 1 | ... | ... | ... | ... |
| York, East Riding | . | . | 2 | 6 | 4 | 6 | 8 | 12 | 8 | ... | 9 | ... | 3 | ... | ... | ... | ... |
| " North Riding | . | . | ... | 1 | 1 | 1 | ... | 1 | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| " West Riding | . | . | 5 | 14 | 9 | 14 | 10 | 23 | 25 | ... | 8 | ... | ... | ... | ... | 21 | ... |
| Liberty of the Isle of Ely | . | . | 1 | 3 | 2 | 3 | 1 | 6 | 4 | ... | 2 | ... | 1 | ... | ... | ... | ... |
| Soke of Peterborough | . | . | ... | 1 | 1 | 1 | ... | 1 | ... | ... | 1 | ... | ... | ... | ... | ... | ... |
| TOTAL | . | . | 41 | 106 | 65 | 106 | 101 | 266 | 269 | 64 | 34 | 13 | 65 | ... | ... | ... | ... |

* Counties include such Boroughs and Burghs as are locally situated within the limits of the Counties, or, if surrounded by two or more Counties, then they are included in the County with which they have the longest common boundary. Berwick-upon-Tweed is included in Northumberland.

Veterinary Department, Privy Council Office, 22nd July, 1879.

Facts and Observations.

POISONING BY COW-BANE (*Cicuta virosa*).—Our colleague, Professor Cobbold, who is on a tour in Brittany, writes to us to the effect that Monsieur Barrier (*Vétérinaire en Premier and Director of the Dépôt de Remonte de Guingamp, Côtes du Nord*) has brought under his notice an extreme instance of poisoning by this plant. Fourteen cows were seized with violent symptoms of vertigo, which supervened in less than two hours after they had partaken of this well-known umbellifer. Eleven of the animals perished; the first one at the expiration of six hours from the time of the first appearance of the symptoms. Nothing effective could be done in the way of cure. The three animals which recovered had doubtless eaten a comparatively small quantity of the poisonous herb. Dr. Cobbold finds that the plant is abundant in Brittany.

CATTLE IMPORTS.—From the annual report of the Veterinary Department of the Privy Council Office it appears that the total number of animals imported into Great Britain from all countries in 1878 was as follows:—From European countries we received 103,049 cattle, 808,378 sheep, 37,648 swine; from Canada and the United States we received 86,439 cattle, 84,072 sheep, 17,953 swine; from the Channel Islands and other small countries we received less than 3000 head; while from Ireland we received 729,221 cattle, 642,999 sheep, 470,547 swine—making a total of 3,043,090 animals, against 2,958,441 in 1877.

HYDROPHOBIA.—A case of this malady is reported from the outlying village of Drayton, in Somerset. Edward Miller, 51, was, as far back as *three years* ago, playing with a little dog belonging to Mr. Gillard, when he was bitten in one of the hands. There was a slight wound, which was cauterised by Mr. Brooke, a surgeon of Langport, and it soon healed. On Wednesday morning, July 9th, Miller complained of a pain in the part which had been bitten. Mr. Brooke was called in, but Miller died from hydrophobia.

RABIES IN FRANCE.—The *Standard* of July 7th says that it appears from official statistics just published that no fewer than 103 persons were bitten by mad dogs in Paris and its suburbs during the past year. Of these thirty are known to have died from hydrophobia. About 500 mad dogs and a score of mad cats were killed by the police during the year. In July and August alone as many as 4730 stray dogs were taken to the *fourrière*, and all but 200 were killed. This war of extermination against the canine race naturally led to a falling off in the amount of hydrophobia, and the authorities

say that so far the present year shows a great improvement on the past twelvemonth.

THE DAIRIES, COWSHEDS, AND MILKSHOPS ORDER.—The *Gazette* of July 10th contains an order from the Privy Council, dated the 9th, that the Dairies, Cowsheds, and Milkshops Order of 1879, and the amendment of the same date, are revoked; and stating that “it shall not be lawful for any person following the trade of cowkeeper or dairyman to begin to occupy as a dairy or cowshed any building not so occupied at the making of this order until he first makes provision, to the reasonable satisfaction of the local authority, for the lighting and ventilation, including air space, and the cleansing, drainage, and water supply of the same while occupied as a dairy or cowshed.” It will also be necessary to give one month’s notice in writing to the local authority of the intention to occupy any such building. The North-Western Association of medical officers of health have held a meeting in Manchester, and discussed the new Dairies and Milkshops Order. It was urged that the Inspector under the Order should be a qualified veterinary surgeon, that the general administration of the Order should be by the medical officers of health, instead of by the police, and that the putting of an Order into effect should be compulsory. The question of taking action to effect a change in the Order was adjourned to another meeting.

MEDICAL AND VETERINARY ARRANGEMENTS AT THE CAPE.—We learn from Natal that there is a most marked contrast between the medical and veterinary arrangements of the expedition, “one department being all confusion, whilst the other does its work quietly and unostentatiously, but with perfect regularity.” Surgeon-General Woolfreyes and Principal Veterinary-Surgeon Gudgin are spoken of as equally able administrative officers, and are supported by equally zealous subordinates; but the system of medical “unification” is pronounced “a most complete failure—in fact, so complete a failure, that Lord Chelmsford has found it necessary to write a strong dispatch on the subject of it.”—*Army and Navy Gazette*.

POISONOUS SAUSAGES.—The *Daily News* of June 20th reports that no fewer than forty persons, who had partaken of sausages purchased at a stall in the public street at Thaxted, Essex, displayed symptoms of poisoning, and some of them were reported to be in a critical condition, and were being attended by a staff of medical men. A parcel of the sausages had been sent to an analyst for his examination and report.

THE VETERINARIAN, AUGUST 1, 1879.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

INOCULATION IN PLEURO-PNEUMONIA AND THE TRANSMISSION OF THE DISEASE BY MEDIATE CONTAGION.

REFERRING to our leader in the last number of the *Veterinarian* on the subject of mediate infection in the production of pleuro-pneumonia, the *Mark Lane Express* has the following remarks on the editorial which appeared in the *Veterinary Journal*:

“An editorial in the *Veterinary Journal* deals with ‘the mode of transmission of bovine contagious pleuro-pneumonia, and the value of protective inoculation.’ And here we find very different opinions expressed from those quoted above. The *Veterinary Journal* says:—‘The notion that the contagium could only be conveyed by the breath was, we believe, founded on one or two imperfect experiments by those who appear to have been but little acquainted with the nature of the disease, or of what had been ascertained with regard to it by scientific investigators, and whose knowledge of contagious disorders in general, and their mode of dissemination in particular, was rather vague.

. We are quite ready to believe that this serious disorder can be only conveyed by the breath of the sick animal, when we are furnished with evidence sufficient in quantity and quality to outweigh that of the clinical observers who maintain the opposite opinion.’ The *Journal* points out that the experiments at the Brown Institution ‘do not fulfil all the demands of pathological investigation, and are consequently incomplete and unreliable;’ and warns ‘agriculturists and the veterinary profession against receiving with implicit confidence’ the conclusions arrived at in the report. It is quite true that the experiments were incomplete, and therefore inconclusive; but they have not been represented as proving anything further than to the extent they were carried. And we

may in turn warn agriculturists—for that is clearly within our province—that the *Journal* brings forward no *evidence*—not one single fact—to support the position of ‘the clinical observers who maintain the opposite opinion.’ We do not express any opinion as to the point at issue; but we are entitled to comment on the evidence hitherto supplied, and that appears to us to be in favour of the direct cohabitation theory, because we have seen no evidence of the disease being communicated in any other way. It is a matter of very great importance, and we shall be glad to see it settled. Then, with regard to inoculation, the *Veterinary Journal* takes up a very decided position, as of course it is entitled to do. It appears that Mr. Rutherford, a veterinary surgeon of Edinburgh, has inoculated some 2000 cows ‘in and around’ that city, and none of them have afterwards contracted the disease; and his loss has been only 1 per cent., a proportion which he hopes still farther to reduce. From this, and the Continental experiences, which we have had over and over again, the *Journal* concludes that ‘the question as to its efficacy and safety is now beyond discussion or dispute; thanks to Mr. Rutherford, the problem is solved, and the freedom of Edinburgh from pleuro-pneumonia at the present time—a condition which has not been known to exist for more than thirty years—is mainly, if not altogether, due to his scientific skill, indomitable perseverance, and intelligent enthusiasm. . . . With regard to the protection afforded by inoculation, there cannot now be any reasonable doubt, except with those whose unvarying prejudice to the operation renders them incapable of acknowledging the power of stubborn facts.’ At the risk of coming within this category, we may ask whether the everyday practice of this Edinburgh veterinarian, amongst the ever-varying conditions afforded by town dairies, fulfils ‘all the demands of pathological investigation;’ and, if not, whether the evidence is not ‘consequently incomplete and unreliable?’ In that case we shall be justified in warning ‘agriculturists against receiving with implicit confidence the conclusions arrived at.’ We can see nothing in Mr. Rutherford’s testimony which differs in kind from volumes of

similar experiences ; no positive evidence is afforded beyond the small percentage of his losses from the effects of the operation. If he did not inoculate all the cattle in Edinburgh we have merely a repetition of a portion of the evidence from Australia enumerated in Mr. Bruce's report, three years ago, namely, that cattle, both inoculated and uninoculated herds, '*left off dying* about the same time.' It is not stated how many of these 2000 cows remained for any length of time under his supervision, yet he declares positively that 'never in a single instance has inoculation failed to give immunity.' Mr. Rutherford states that, 'given an outbreak occurring, immediate slaughter of the affected and inoculation of the others results in the outbreak always being arrested within a period of three weeks; the three weeks being ample time for the disease showing itself, should it so have happened that any of these inoculated were at the time of inoculation affected.' But how can this be reconciled with the accepted fact that the disease has a period of incubation which has been known to exceed three months? The *Journal* says, 'One of the great objections offered by the opponents of inoculation is, that because it does not produce pleuro-pneumonia, therefore it cannot prevent it. But they evidently forget that vaccination does not produce smallpox; and yet we know that when carefully performed it protects the vaccinated individual from that disease. Because inoculation does not give rise to the lung disorder, we cannot assert that it will not prevent the disorder. Years ago we pointed out in the clearest manner possible that inoculation with carefully selected virus . . . produces . . . a peculiar specific infective process in and around the seat of operation, which no other virus we were acquainted with could occasion; and that this process, in its pathological characteristics, much resembled that taking place in the lungs of oxen affected in a natural manner. To this opinion we still more firmly adhere, as a result of recent inquiry and observation . . . leaves nothing more to be desired in the way of evidence as to the absolute immunity conferred by inoculation.' But Dr. Burdon Sanderson, in his report of the experiments at the Brown Institution, says,

“ Another statement that has been made with reference to the mode of action of inoculation is equally unfounded, viz. that although inoculation never produces actual pleuro-pneumonia, yet, that it gives rise, at the place where the morbid material is introduced beneath the skin, to a local disease which is of the same kind as the real disease of the lungs, and that consequently the effect of the inoculation is to produce a sort of pleuro-pneumonia of the skin! That is to say, in reality, that the animals have a modified form of pleuro-pneumonia *in their tails!* Dr. Burdon Sanderson goes on to show that ‘the only way in which it would be possible to prove that any diseased material derived from the skin of the inoculated animal was pleuro-pneumonic would be by showing experimentally that when introduced into another animal it produced pleuro-pneumonia. If this proof were given we should have a right to conclude from analogy with similar cases, that in all probability immunity would be conferred on the infected animal; but in the absence of such proof, the only way in which the protective power of inoculation can be settled for practical purposes, is by observing whether inoculated animals can get pleuro-pneumonia by exposure.’ Precisely so; and the question naturally raised is, for how long Mr. Rutherford’s inoculated animals can be proved to have resisted contagion.”

This is perfectly fair criticism, and we may say at once that it includes the common sense, as well as the scientific aspect of the position. We do not for a moment question Mr. Rutherford’s skill as an operator, but there cannot be anything in his method which is so decidedly different from that adopted by Mr. Priestman for the last thirty years, and by others here and abroad, as to justify the claim of absolute infallibility which is urged in its favour. Inoculated cattle do frequently become affected after inoculation, and in some of the countries where inoculation is most practised the disease is most prevalent; for example, England, Belgium, Germany, Australia. As far back as 1853, as veterinary adviser of the Royal Agricultural Society, we were commissioned to investigate the subject in Belgium, and we

found Dr. Willems quite as strong in his conviction of the protective efficacy of inoculation as Mr. Rutherford now appears to be. We did not share the Doctor's sanguine views, as will appear from our report which was published in the 14th volume of the *Journal*.

Whether our knowledge of the nature of pleuro-pneumonia was vague or clear at that time we do not pretend to decide; but we can affirm that the conclusions at which we then arrived have been supported by the added experience of another quarter of a century. If inoculation confers any protection, which has not yet been proved to result, the question is, as the *Mark Lane Express* states it, How long?

Conceding all that is asked by the most enthusiastic adherents to the system, we should still have to urge that there is no meaning in the statement that an outbreak is arrested in three weeks, a period which may be expected to elapse without the occurrence of a further case of the disease after the animals first attacked have been slaughtered.

It is not pleasant for those who have the interest of the veterinary profession at heart to see the agricultural press accepting the duty of warning agriculturists against receiving with implicit confidence the conclusions arrived at by veterinary authorities; but we should be guilty of an outrage on common sense if we attempted to show that the warning was in this instance unnecessary or unjust.

NATURAL COWPOX.

WE are exceedingly desirous of obtaining some lymph from vesicles on the teats of cows in cases of so-called natural cowpox. It should be taken on ivory points, and as early as possible after the development of the vesicles. Our numerous readers, especially those residing in dairy districts, will, we feel sure, kindly make inquiries as to the existence of the disease in their respective localities, and take the necessary steps to furnish us with a supply of lymph.

Extracts from British and Foreign Journals.

PROFESSOR BRANFORD'S ADDRESS AT THE ALBANY FARMERS' ASSOCIATION, GRAHAM'S TOWN, CAPE OF GOOD HOPE.

WE have received *The Journal*, Graham's Town, Cape of Good Hope, of May 16th, containing an important address delivered by Professor Branford to the Albany Farmers' Association on his investigations into the nature and causes of the losses among animals and Colonial sheep in particular. The length of the address compels us to omit much interesting matter, and only to lay before our readers its chief salient points.

"A meeting of farmers was held at the Town Office on Tuesday, May 13th, with the object of meeting Professor Branford, and making arrangements for utilising his stay in these parts. A committee consisting of Messrs. G. White, J. Webb, and J. Gadd was instructed to make the necessary appointments for the Professor to visit different centres in the district. After some preliminary remarks Mr. Branford said that—

"The great interest taken by your Premier, the Hon. J. Gordon Sprigg, in the welfare of all colonists, but particularly of those engaged in pastoral and agricultural pursuits, more especially in these eastern districts, together with a knowledge of the very serious and hitherto apparently undescribed and unaccountable causes of the terrible losses through the great decadence in sheep farming, together with the reduction of agricultural profits in this immediate neighbourhood, induced that gentleman to give earnest attention to the statements of the deputation which waited upon him at the request of the Association in October last, the result of which has been his ready compliance with your wishes that I should visit Lower Albany, together with adjacent districts, and endeavour to ascertain the why and the wherefore of these serious, yet, I hope, not incomprehensible though well-known facts.

"I elected to take my tour of investigation overland, through the Midland, Northern, and North-Eastern and Eastern districts, intending to be in this neighbourhood at such a time as those gentlemen before alluded to consider best. For the delay which has occurred I am to a great extent personally responsible; but not entirely so, inasmuch as in consequence of disease amongst the horses of the Colonial Government at Kingwilliamstown, detaining me in that district longer than at first anticipated, my absence is partially attributable. I trust, however, that some good may result from my present visit, and that the love of inquiry may be sown broadcast amongst you, and that great benefits will ultimately result to the community at large from the action of this Association. Your indefatigable secretary, Mr. Gadd, has asked me to give a slight sketch of the evils at present so entirely engaging the attention of us all, and the few, I may say very brief remarks I make, will, I trust, throw some information on the subject. I need not occupy your time

with long lists of statistics as to what mortality has been witnessed, nor with irrelevant verbiage, but ask at once to what causes are all or part of these evils to be attributed. A great cry has been raised that overstocking is the root of the evil; another cry is raised about the tick and its concomitants; some assert that grass burning, others, that twice shearing has its baneful influence; again, that kraaling has been a great factor in the destructive work. All these conjointly, I believe, have had bad influences, and to these evils may be added the lack of a supply of saline agents to the sheep, and the non-return to the soil of those plant-growth stimulating agents, which exist in the excreta of animals, and which for years past have been accumulating in the kraals near the homesteads; and this state of matters, the non-return of such excreta to the soil, and the situation of the kraals, which, as a rule, are at the extreme end of the farm, has given rise to an immense amount of tramping and wear and tear of the veld, which, in a naturally dry climate, we must admit cannot be otherwise than highly injurious. Now, upon careful reflection, we should, I think, all agree in a belief that there is much reason in these statements, and I think we cannot do better than discuss the question, comparing the remarks with a few startling facts that may not have been generally thought of, but which, upon reflection, seem to carry on their face good ground for such statements, especially as regards overstocking and manuring, and the deficiency of saline agents given to any stock. Merchants tell us (and they surely are tolerable good judges of the financial part of the business, seeing that through their hands the produce of the land passes before it leaves this colony) that they have observed marked differences in their returns at certain periods of their business transactions or mercantile career, such periods harmonising considerably with other theories, and tending to prove the truth of professional statements. We are told that after a number of years of uninterrupted grazing, up to a certain point, heavy wool sales were experienced, then a gradual decline set in, followed by almost *nil*, then again a reaction and great rise in weight of products, followed after a few years by similar depression. Again, we are told *nil*, appear and so on, indicating that some special, as well as general cause, must have been in operation to produce these terrible consequences under our more immediate consideration this morning. For instance, in 1835, men who commenced with a small flock found in seven or eight years great increase, and in 1846 had become rich and wealthy; no overstocking evils were yet felt. In 1846 a rest was given to the land by the war, and wool fell off by reason of farmers trekking from the district. Then up to 1851 a prosperous period showed itself for wool-farmers, but decline began just as another war commenced; then again we find the land getting rest. After the war and short rest, the scale turned on all farms in favour of the wool-growers, and sales increased steadily for a few years, when gradually a variation and decadence appeared to be setting surely in, and farmers began inquiring of each other, in all directions, as to the condition of their sheep. The replies were in nearly every instance unsatisfactory; and for the last ten or fifteen years, this unsatisfactory state of things has been steadily getting from bad to worse, and we now find those farms which, in years past, were undoubtedly the best wool-producing farms, are from mortalities increasing among the sheep, now comparatively worthless, and some utterly useless. I need not particularise such farms, the facts are indisputable, and it behoves everyone of us to seriously consider how we can remedy the evil, if a remedy can be found. Looking to the statements of the merchants, one would infer that after a few years' rest we

may expect to see the land yielding its increase, and the bank of nature again honouring the cheques of her avaricious customers; meanwhile, let us endeavour to find and adopt measures for hastening that happy time. At the present juncture it is needless to suggest application of manure, artificial or natural. The labour question negatives that. Fencing will tend greatly to the restoration of the veld; on that account ostrich farming will prove highly beneficial exclusive of the present wealth in their feathers; the feeding of ostriches, also, with so large an amount of artificial food, will have undoubted influences in manuring the ground—with manure equal almost to Peruvian Guano—but spread over the land in homœopathic doses.

Grass-burning will also lose its votaries, for few, I think, will be so foolhardy as to apply the firebrand to an ostrich-camp.

As to *twice-shearing*, it is quite evident such a system tends to reduce the vital powers of the animal, especially when such is a breeding animal and has to withstand the effect of the inclement weather, during the period of utero-gestation, as well as at a time when it is suckling its offspring. For hamels or slaughtering sheep I do not so much object, but even in those it is most vitiatory. I would most decidedly advise legislation to prevent removing the covering which Nature has provided when food is scarce and weather cold. In England any one shearing an animal under such circumstances would be prosecuted and heavily fined for cruelty to animals, unless a provision for artificial covering were made by the owner of such animals shorn. Many cases have been brought before the judicial bench and punishment inflicted, and it is now not an uncommon occurrence to see sheep sent to market for slaughtering with rugs on after being shorn, and woe betide the man who sends sheep without. So great is the antipathy to such cruelty, and so decided are the authorities to put a stop to it that opinions of the most eminent physiologists and medical men have been taken upon the subject, and I assure you, gentlemen, that shearing an animal and submitting the same to inclement weather and great alternation of temperature has such an effect upon the flesh, that the meat of such animals has even been condemned, and its sale stopped for human food. If, then, shearing at the approach, and in the midst of winter has such a prejudicial effect, and the facts are undeniable, how necessary it is that this Association should do all in its power to put a stop to so barbarous, inhuman, and unnecessary a process, and one tending to deteriorate the quality and vital powers of the sheep. I may even go further, and say that we should petition the new Parliament to pass a short Act in connection with a general Scab Act to do away with such a standing disgrace. A Fencing Measure should also be advocated. With a view to the restoration of the veld, I would suggest that on those farms where evidence shows, or suspicion even, rests, of the same having been overstocked, grass seeds—either European or selected and collected from those districts of the Colony where the most nutritious and best feeding grasses are still flourishing—should be sown broad-cast in various parts of the veld; that where such be sown no grazing by sheep should be allowed for at least a twelvemonth, and by that means opportunity would be afforded for restoration of the veld. I may state by the way, that some time since I brought down from the neighbourhood of Herschel some valuable grasses, and on asking farmers in the Beaufort district whether they had such in their veld, they replied no, but they recollected them in their veld many years ago; which clearly proves my point that the best pasture has been eaten out, and has given place to coarser and less useful grasses. This plan of seed-sowing may on first

thoughts seem expensive, and to an extent impracticable and of no comparative benefit, looking to the vast extent of the farms, but there are many districts from which seeds can be collected at little expense, and once we give the farms another chance, we may effect glorious results. It cannot be doubted that there is in these farms now considered worthless for sheep-farming some alteration in the character of the pasturage, an absence in many places of those grasses which are observed to exist in all their luxuriance at the present time on some of the best sheep farms of the present day. To be practical on these points, I would suggest—although I would rather the suggestion came from some other body—that Government should be asked to take up the matter and select one of these farms now considered worthless, but formerly amongst the best in the country, and order a series of experiments to be conducted thereon for the benefit of the community. The old adage is, “it is no use crying over spilt milk ;” and if upon scientific work being carried out, it be found that there is really no balm in Gilead, why there the matter must rest.

“Let the reminder be ever so unpleasant, we must not forget that in years past and in times of great wool sales, when the streets of this city were crowded with spans of oxen and heavily-laden wool waggons, farmers were prosperous, they grew avaricious, and wanted to become rich, irrespective of future consequences. The wool obtained from a fair sized flock was not sufficient ; increase must succeed increase ; no thought could be entertained under such apparently permanent prosperity, of such a proceeding as selling an appreciable number of such increase of sheep from the farm, and thereby giving nature an opportunity of recuperating herself, or even keeping up the supply of nutritious material for support of the numerously increasing herds on her face, the same herds daily removing from her surface those flesh-forming, and wool-growing materials, the product thereof removed through the merchant for ever from the land, and the most unappropriated portions of which became in most part accumulations of potash and other salts with albuminous and gelatinous masses deposited and allowed to remain in kraals, never to return to the land, thus gradually but surely making most keenly visible the pernicious effects of over-stocking ; no concomitant return of food-stimulating material being made by the farmer. The results are now too patent both in the character of the food observed in various parts of these once great wool and stock-producing districts and the physiological and anatomical condition of the digestive organs of those animals fed thereon. In my professional investigations from my very first visit to this city I have had numerous opportunities of making *post-mortem* examinations, and so impressed have I been with the marked differences in the appearance ordinarily visible in the stomach of those of those Zuurveld sheep and cattle, especially on the reported bad feeding farms and those on Sweetveld. In the former the capacity for food storage becomes enormously enlarged, the walls or coats of the stomach, especially the rumen or first stomach, becoming dilated, extended, and weakened in their powers of contraction, and other functions necessary for healthy digestion. In the latter—the Sweetveld stock, where nutrient food is obtainable—the marked difference exists in the capacity being natural,—so much so that any of you gentlemen taking the trouble to compare only a few cases will be enabled in a short time to say whence the stomach of a slaughtered animal was taken, whether sweet or zuur ; whether from those farms now bad for sheep and cattle, or otherwise. Gentlemen, from this circumstance alone, if no other, we ought to endeavour to glean some information and draw an inference or two. Why is it, I say,

that this state of the organs exists? I look upon it that on these said to be worn-out farms, animals by hunger are obliged to eat what they can—if from overstocking the best grasses are eaten off—from lack of nutritious material in the food they get what they can, endeavouring to make up for the deficiency of nutriment by bulk, and on these farms compared with others whereon no reports of sickening animals are found, a larger amount of food is crammed into the stomachs. This food containing a greater amount of woody fibre and more indigestible material, also deficient in nutriment compared with quantity, has the effect of gradually and permanently distending the coats of the stomach, weakening the digestive powers, and rendering the subject thereof more liable to contract disease. Now, these anatomical and physiological facts are such, as I have before remarked, any one of you can, by common observation, make yourselves practically acquainted with. For myself, to be practical in my remarks, I would say it becomes us to bring art and science to bear upon this condition of affairs, and inquire what means can be adopted to remedy such. For immediate action, I would suggest that saline agents be not lost sight of, to stimulate good digestion, also to act as anthelmintics or worm-killers. Parasites as a rule find a more suitable habitat or happier home in such animals, and further I must mention parasitic diseases are most prevalent therein. Next to rely upon is the fact that as much change as is reasonably practicable in the character of the food where disease has suddenly shown itself, will be found the sheet-anchor of success in the treatment, but sheep should not be compelled to travel miles upon miles daily for their food supply. Camping or fencing and subdividing estates will ultimately prove of more worth, generally speaking, than anything else one can recommend; at least such is my opinion. For by such means greater security will be given not only for safety but for that healthy change of food required under many circumstances—facts well known to most flockmasters. Nor is it advisable to place them too suddenly on rich food-grounds, or allow them to partake of an unlimited supply. A check should be put on such, as the overloading the stomach with too great a quantity of rich and highly-nutritious foods will be found in many instances not only highly dangerous but often fatal. Artificial food, or wintering your sheep on stubbles or old corn-lands, or with a proportionate amount of root crops and cultivated food, is not at present to be anticipated; for that like the land manuring process so necessary, depends too much upon the labour question. The climate is said to be unfavorable to common turnips, as a rule; but mangolds thrive admirably in many places, and should be grown largely. The intense heat appears to do them no harm where irrigations can be carried on; and from what has come under my own observation, I am hopeful for the future of this Colony, as an agricultural and pastoral country. I think the time will come when the labour question will be so satisfactorily arranged that sheep and cattle farmers will bestir themselves to farm more upon scientific principles than the present happy-go-lucky, take-your-chance, easy style of living, and not expect a panacea to be found in a single dose of medicine forced down the animal's throat for a malady which a little judgment and only a tolerable amount of careful attention would have prevented. I am well aware there are serious losses borne by many industrious and careful farmers. Such, of course, require professional aid, and, where facilities exist for the farmer to consult his professional friend, their united action will generally, I trust, be attended with good results. Still, so great a burden must not be placed on medicinal agents or so-called specifics for diseases. Hygienic principles must be more carefully

studied. I am prolonging my remarks far beyond what I thought I should, and could go further, but having dealt with this subject on a previous occasion in one of my parliamentary reports, I do not desire to take up so much of your time now. I thank you for your attention, and observe there are resolutions and propositions to be put before the meeting which must also occupy some time, but I hope to meet many of you now present as well as others in the district at your homes, when I shall be happy to do all in my power to render you what professional assistance I can. I should regret to leave the Colony without the hope and feeling of assurance that my visit here had proved of lasting benefit, therefore I will just add, any gentleman having cases of sickness among his stock of whatever kind, whether sheep, cattle, horses or ostriches, I shall do my best to get to his place to see the same, as by such practical work more good will arise than by many personal or guessed opinions given upon the symptoms you may describe, be such description ever so elaborate or apparently correct. From the sick animal itself, more practical and I trust permanently useful information will be gained."

EXPERIMENTS ON DISINFECTION.

Two sets of important researches on disinfection have been lately going on at Berlin. In both, the test of the efficacy of the particular disinfectant used has been the effect produced by it either in destroying bacteria and vibriones in putrid fluids exposed to its action, or in preventing their development in a form of "Pasteur's fluid," in which the objects that had undergone disinfection in various degrees were immersed.

The first experiments, those of Dr. Mehlhausen, Director of the Charité Hospital, refer chiefly to the disinfection of rooms in which scarlet fever and other infectious cases have been. The result arrived at is that the most energetic and the cheapest disinfectant is sulphurous acid. Chlorine gas has the disadvantage of destroying clothes and furniture exposed to it, while it is less easy to manipulate, and four or five times as expensive as sulphurous acid. Twenty grammes of sulphur per cubic metre of space destroy, when burnt in a closed room, all bacterial life in sixteen hours. Besides blocking up the doors and windows, Mehlhausen advises that the room shall be previously warmed, if the weather is cold, in order to prevent the gas finding its way into the neighbouring apartments. It is also advisable to damp the floor before lighting the sulphur, so as to profit by the great solubility of sulphurous acid in water. Eight hours is long enough to keep the room shut up after the sulphur begins to burn, and at the end of that time any clothes or bedding in it will be effectually disinfected. Mere

free exposure of an infected room to the air by allowing the windows to stay open several days is not enough to disinfect it. This has been practically proved at the Charité Hospital after scarlet fever and measles, in several instances.

The second series of experiments was made by Dr. Wernich of Breslau, in the chemical laboratory of the Berlin Pathological Institute (*Centralblatt Med. Wiss.*, No. 13, 1877), upon the disinfecting power of sulphurous acid and of dry heat. The method adopted consisted in preparing an "infecting material" by steeping woollen thread, pieces of linen rag, and cotton wool, previously proved to be free from atmospheric organisms, in putrid solutions of fæces or meat, and gently drying them. These substances were then tested for their capability of producing bacteria by means of the modified Pasteur's fluid above mentioned, which consisted of distilled water 100 parts, cane sugar 10 parts, ammonium tartrate, 0.5 part, and 0.1 part potassium phosphate. This solution was freshly prepared before each set of experiments, filtered, boiled for half an hour, and immediately poured into the test glasses and preserved with the usual precautions. To test the effect of disinfection, the wool or wadding, after exposure for a definite time to a definite degree of heat in an oven, or to a measurable volume of sulphurous acid in a bell-glass, was immediately transferred to the Pasteur's fluid, and the efficacy of the disinfectant was estimated by the rapidity of development of bacteria, if such appeared, or by their complete absence, as indicated by the fluid remaining perfectly cloudless. It was thus found that 3.3 per cent. of sulphurous acid by volume failed even after many hours to prevent the development of bacteria, but that if the amount of gas reached from 4.0 to 7.15 per cent. by volume of the contents of the bell-jar, and the process had gone on for at least six hours, no bacteria at all developed. On the other hand, while exposure to a temperature of 110° to 118° Cent. even for twenty-four hours failed to destroy the bacterial germs, five minutes' exposure to one of 125° to 150° Cent. invariably succeeded, and the test fluid remained clear even for eleven days or longer. Dr. Wernich specially reminds us that his results must not be taken as applicable to all forms of bacteria, some of which probably require severer measures for their complete destruction. He also points out that it is easier to disinfect wool than linen, and that cotton wadding is the most difficult of all to free from infectious germs.—*Medical Times and Gazette*.

SPOROKTON.

IN reference to the above subject we append a description, extracted from 'Cooley's Cyclopædia,' of several new forms of disinfectant which have been brought out by our colleague Professor Tuson, and to which he has given the name of SPOROKTON.

"In order that the peculiar merits of the preparations which have been introduced to the public under the name of Sporokton (germ-killer) may be fully appreciated, it is desirable to explain the true and individual meanings of 'Deodoriser,' 'Antiseptic,' and 'Disinfectant' — words which are too often improperly employed as if they had the same signification, and as if, in fact, they were convertible terms.

"A deodoriser is a substance which will absorb or destroy bad smells; an antiseptic is an agent which will prevent or retard putrefaction; and a disinfectant is an agent which will render harmless the virus of smallpox, scarlet fever, measles, diphtheria, influenza, pleuro-pneumonia, cattle plague, glanders, distemper in dogs, and other infectious or contagious diseases.

"Now, medical authorities and sanitarians are of opinion that the most potent disinfectant with which we are acquainted is sulphurous acid, a gas which has been used for ages as a fumigator. Sulphurous acid has not, however, been so generally employed for disinfecting purposes as one might, from these circumstances, have expected, on account of the difficulties and inconveniences which formerly attended its generation.

"To remove these drawbacks, and to render sulphurous acid, both as a gas and in solution, easily and cheaply available for the above-named and many other applications, sporokton has been invented. Several varieties are made; they are as follows:—

"*Liquid No. 1.*—This preparation consists of a colourless solution of a non-volatile antiseptic, usually a salt of zinc, impregnated with eighty times its bulk of sulphurous acid gas; in other words, one pint of the liquid contains ten gallons of gas. Liquid sporokton is, in fact, a combination of one of the most powerful antiseptics with the disinfectant; the former ingredient will effectually prevent the putrefaction of any solid or liquid animal or vegetable matter with which it may come in contact, while the sulphurous acid will rapidly pass off in the gaseous state into the surrounding

air and act as an energetic destroyer of noxious atmospheric impurities.

“Liquid sporokton absorbs ammonia and sulphuretted hydrogen, destroys bad smells, and prevents the spread of infectious diseases; it is, consequently, a valuable agent for the deodorisation and disinfection of wards of hospitals, sick rooms, dairies, larders, ships, stables, cow-houses, kennels, piggeries, slaughter-houses, urinals, water-closets, privies, cesspools, sewers, drains, and other similar buildings and places.

“After it has parted with the whole of its sulphurous acid gas, liquid sporokton leaves an odourless non-volatile antiseptic and absorber of ammonia and sulphuretted hydrogen.

“Liquid sporokton evolves its sulphurous acid by simple exposure to air, without the aid of heat, so that no risk of fire attends its use, as is the case when rooms, buildings, holds of ships, &c., are fumigated with this gas by the old plan; it will not stain or in any other way injure undyed woollen, linen, or cotton goods. It is consequently well adapted for the disinfection of underclothing, sheets, blankets, bed-furniture, &c.

“Liquid sporokton may be employed for the instantaneous preparation of a bath or lotion of sulphurous acid, to be used, under medical direction, in the treatment of itch, ring-worm, chronic eczema, lepra, psoriasis, impetigo, pityriasis, &c., in man, as well as mange, scab, and other skin affections, in the lower animals.

“Liquid sporokton is clean, it requires no skill in using it, and its action is perfectly controllable.

“*Liquid No. 2.*—This preparation is specially made for the disinfection and purification of old beer barrels, wine casks, and the like. It is similar in composition to, and may be used for the same purpose as, No. 1; except, however, that as No. 2, unlike No. 1, is liable, from its containing iron instead of zinc, to stain linen, wood, &c., it should be employed for disinfecting clothing or sprinkling over floors, decks of ships, and the like.

“*Solid.*—This is a powder, usually a mixture of calcium sulphite and ferric chloride, which, by simple exposure to air, will slowly and steadily, or when sprinkled with water, rapidly give out 25 per cent. of its weight of sulphurous acid and leave no unpleasant smell behind it. Sulphurous acid gas, unlike non-volatile disinfectants, quickly mingles with the air, and seeks out, as it were, the noxious atmospheric impurities it is capable of destroying.

“Solid sporokton, in addition to evolving sulphurous acid,

contains an excess of ferric chloride, which, together with this gas, renders it a most useful and efficient antiseptic.”
—EDS.

THE COMPARATIVE MERITS OF ANIMAL VACCINATION
AND ARM-TO-ARM VACCINATION.

By P. M. BRAIDWOOD, M.D.

ANIMAL vaccination, like many other important subjects, has hitherto excited only transient interest. During the meeting of the British Medical Association in Leeds (28th July 1869, *British Medical Journal*, 4th September 1869), two papers were presented on this question, both of them advocating strongly the protection against smallpox afforded thus, and each based on the personal experience of its author. Since that date reference has been made in the medical and lay press of this country, both by correspondence and otherwise, to the success of animal vaccination, more especially in Belgium. Nor have the authorities in this country, who are responsible for our national vaccination arrangements, been indifferent, seeing that since the above date the Privy Council Reports contain the results of an investigation into this question by one of its medical officers. Still matters remain *in statu quo*, the arm-to-arm method (termed by some the Jennerian method) is the generally practised and authoritatively approved procedure. In the *Brit. and For. Med. Chirur. Review*, April 1870, I stated in an article entitled “Animal vaccination” the special advantages which seemed to me possessed by “heifer lymph.” In the following paragraphs my desire is to draw attention to a pamphlet recently published by Dr. Martin of Boston, who has had extensive experience of animal vaccination, and is an ardent advocate of this procedure, and to refer to the debate on vaccination recently held (22nd May) before the Metropolitan Counties Branch of the British Medical Association, and reported in the *British Medical Journal* of 22nd June 1878.

The brochure before us* originated with the appointment in 1876 by the American Medical Association of a committee “to investigate and report upon animal vaccination.” Dr. Martin, chairman of this committee, assumes “entire and undivided responsibility” for all the statements contained in this report, seeing he was unable by distance of residence to submit the report to the other members of committee. After some pre-

* ‘On Animal Vaccination,’ by H. A. Martin, M.D., Boston, 1878.

fatory apologetic remarks, Dr. Martin proceeds to discuss the question—one of paramount importance—"Whether the virus obtained by the inoculation of bovine animals with the virus of original cowpox induces the development of *Vaccinia* of greater perfection, and, therefore, of probably more protective efficacy than that obtained by the transmission of the same disease on a series of human subjects?" The key-note of all legal enactments, the opposition to such laws, the oft-related results of smallpox epidemics, the origin of anti-vaccination leagues—all include the pith of this query. But the answer to it—a decided and truthful answer—is difficult to reach. If the only reliable test, post-vaccinal inoculation with variolous lymph, could be applied, and better, if it could be repeated at intervals of time, indubitable and veritable results would be obtained; but in the absence of such we must draw our inferences as carefully as possible from nature's experiments during smallpox, epidemics, and from such indirect data as the rôle of phenomena furnished by the several varieties of vaccination and the cicatrices they produce may furnish.

An important point stated by our author, and it is one too frequently overlooked by vaccinators, is that Jenner always maintained *febrile reaction* to be "the only perfect proof of constitutional affection, and *absolutely essential* to the perfection of the prophylaxis. Without it he pronounced a vaccination merely local and quite or nearly without value." This, moreover, has always been felt to be a drawback attached to the continuous transmission of vaccine lymph through the human subject. To remedy it retro-vaccination (or the transmission of *vaccinia* through the bovine species at intervals before its transference to man) was strongly advocated, and with this object retro-vaccination is still carried on in Bavaria and some other countries. But the difference of opinion as to the utility of retro-vaccination has failed to encourage an extensive trial of the method.

Animal vaccination, or heifer-transmitted cowpox inoculation, was inaugurated in America during September 1870 by Dr. Martin, and in his report we have the observations he has made, and the results at which he has arrived, from a continuous and careful study of this mode of vaccinating since that time. During twenty-five years prior to this date, he had "had constant experience" of the Jennerian method, and after receiving the "animal lymph" from M. Depaul of Paris in September 1870, he continued for some time to vaccinate children with humanised (National Vaccine Institution of England) lymph on one arm and with heifer

lymph on the other, so as to detect more exactly the difference of effect in these methods. He was enabled also by the epidemic of smallpox which spread through various parts of America during 1872-73, to ascertain the advantages of animal vaccination over the long-established arm-to-arm method.

This leads us to our author's next query, "Does the practice of animal vaccination offer such advantages over that with long humanised virus, as to justify us in abandoning the latter and adopting the new method?" The reply is derived from a study of the duration of the disease and its regular progression through certain well-defined stages, from noting the character of the vesicle and its crust, and from the appearance of the cicatrix remaining. In these respects the effects of both methods are described and compared. It is well to bear in mind that in studying vaccinia the same rule is applicable as holds good with other diseases, that the changes should be noted *day after day*, and that results grounded on observation of the vaccine vesicle, at intervals of say eight days, are not strictly correct. Dr. Martin observes this rule, and his results are as follow:—Vaccinia, according to the earlier writers on the subject, and as noted by Dr. Martin in children vaccinated with heifer-transmitted cowpox lymph, extends over twenty-one or even thirty-two days, reckoning from the insertion of the virus to the spontaneous fall of the crust. But with the use of long humanised lymph he observed a great diminution in duration—"The course of the disease induced by this virus, (obtained from Mr Robert Ceely of Aylesbury in 1859, and later from the National Vaccination Institution of Great Britain) was usually eleven days from insertion till the crust fell; it was an unusual circumstance for a crust from this vaccination to adhere till the fourteenth day." Again, animal vaccinia pursued a definite course, papulation appearing at the end of the third or beginning of the fourth day, the areola commencing at the latter end of the ninth or beginning of the tenth day, the formation of crust or scab being accomplished on the sixteenth or seventeenth day, and falling off spontaneously about the twenty-fifth. In children vaccinated with humanised lymph the stages of vaccinia were of much shorter duration. These points are illustrated by a reprint, by the heliotype process, of M. Chazal's illustrations in M. Bousquet's work, and though imperfect as a print, it shows well the characteristics of these two forms of vaccinia. The crust resulting from animal vaccinia approached very nearly the size of the vesicle, was of a rich dark brown, or dark mahogany colour, and employed for vaccinating children showed great

reluctance to affect the human system. Lastly, in the employment of animal vaccination there was observed very decided febrile reaction coincident with the rise, development, and decline of the areola, and the disease resulted in an indelible cicatrix or scar of a peculiar and well-defined type. In these last particulars, also, Dr. Martin found vaccination with humanised lymph to be defective, and laying special stress on the characters of a vaccine cicatrix, he has inserted in his report a reprint of Dr. D. Decanteleu's illustration in his *Monographie sur les Cicatrices de la Vaccine*. From several years' experience in vaccinating, and from having repeatedly and carefully watched instances of the various forms of vaccinia, I readily endorse Dr. Martin's preference for animal vaccination, and corroborate the accuracy of his observations. Not merely in my own practice, but in that of many others, I have noted this tendency of vaccinia induced by humanised lymph (the Jennerian method) to run a rapid course, the vesicles, to be easily ruptured, the crust to be of much smaller size than the vesicles and to fall off early, and the cicatrix to form a very imperfect mark. The character of the cicatrix is considered by British authorities to be an important indication of the progress of the disease and of its protective power against smallpox; but a reference to Dr. Martin's footnote (pp. 28 to 31) shows that the definition of a typical cicatrix given in Dr. Seaton's *Handbook* and in other British works does not agree with that of Dr. Decanteleu nor with our author's views. According to these the foveæ (specified by British writers as important) are indicative of an imperfect evolution of the disease, being the remains of sudoriparous ducts, whereas a typical vaccine cicatrix resulting from a constitutional affection and from a thorough local destruction of tissue is a depression showing a "smooth centre surrounded by rays or bands of connective tissue." The production of such a cicatrix is to be understood by reference to the plates accompanying Braidwood and Vacher's *Second Report on the Life History of Contagium*, which show the destruction of tissue induced by vaccinia. It is to be regretted that Dr. Martin has not thought fit to give some account of the causes which, according to Dr. D. Decanteleu, produced such very different forms of cicatrices.

Statistical evidence in favour of animal vaccination is next given by Dr. Martin. During less than seven years he had vaccinated and superintended the vaccination of over 600 animals, and from these over 800,000 charged points and many thousands of crusts and tubes of fluid lymph were issued. Moreover, during the epidemic of 1872-73 he vac-

inated and re-vaccinated nearly 12,000 persons. In comparing the results of his re-vaccinations with long humanised lymph and those in which he used heifer-transmitted cowpox vaccine, he obtained, in the former instance, 35 per cent. of successes, and with the latter 80 per cent. Among the latter, "in certainly over 50 per cent. the appearances very nearly approached the typical primary vesicle." Dr. Martin's 80 per cent. of successes is a considerably higher average than that given by others who have practised animal vaccination. (Dr. Warlomont of Brussels states 62 per cent as being the like average in Belgium), but from my own experience we do not doubt his correctness.

In discussing the alleged disadvantages of animal vaccination as a means of protecting human beings, our author specifies four objections which have been raised, and to three of these I shall refer briefly. The possibility of communicating animal diseases to human beings has been suggested as an objection to animal vaccination. "A sufficient answer," says Dr. Martin, "is that there is not an authentic record, hardly even an unauthentic one, of a single case of this sort in the whole history of vaccination." But in our opinion a stronger negation (one confirmed, too, by experience) lies in the facts, that an animal not in perfect health (suffering, for example, from diarrhoea through change of diet) will not take vaccinia, and that there is no proof that a bovine or any other animal disease (except vaccinia and hydrophobia) can be induced in the human subject by *inoculation*. As regards, next, the objection that animal virus "does not take easily" in the human subject, and that it "does not keep well," our author shows that the former is due to bovine albumen being less readily soluble than that from the human subject, and that it can be remedied by bestowing more care in rendering animal vaccine soluble before applying it to an infant. He states that "direct animal virus on ivory or bone points or quill slips keeps as well as any other, and so does this virus in the form of the dried vesicle or scab;" whereas he considers 30 per cent. of tubes of this virus (fluid) to be not trustworthy in twenty-four hours after their removal.

Two further objections are discussed—and with regret here we notice an unwarrantable amount of blame laid on Dr. Seaton by our author. It is urged by some that the vaccination of a heifer with even "living" warm fluid lymph is an uncertain process. From considerable practice in this procedure I gladly confirm Dr. Martin's remark—"properly done vaccination of animals with bovine virus may be said to be invariably successful, so very rare are the exceptions," the

necessary requisites for success being a very decided degree of technical skill, patience, and experience. The last objection examined—and it is one which has hitherto been the principal obstacle to the introduction of animal vaccination into Great Britain—is, “that animal virus is expensive and difficult to obtain.” If this be urged in comparison with the Jennerian method (arm-to-arm vaccination), no one can gainsay its validity. But we receive as true and weighty the advantages accompanying animal vaccination as urged by Dr. Martin, and which we feel by experience to be real, if we consider it to be of the highest importance that vaccination of the whole community should be done in *the best way*, and that it is a duty devolving on the government of every country to see this carried out, we cannot help regretting that in Britain, the birth place of the discovery of vaccination, there is still wanting the means of providing this prophylactic agent in its purity. Each wave of smallpox as it breaks over our country discloses the imperfect protection afforded by long-humanised vaccine even in the case of children under twelve years of age (although I have hitherto in vain endeavoured to obtain from the authorities of workhouse and other schools the statistics necessary to corroborate this). Each epidemic, if at all severe, is accompanied by a *vaccine famine*, notwithstanding the much-praised resources of the National Vaccine Institution of England; and in the weight of such epidemics we have numberless letters and dissertations published both by the lay and medical press drawing attention to the defects in our national vaccination arrangements. The recent debate in our House of Commons on Mr. Pease’s Bill afforded an excellent opportunity for advocating the establishment and support by our Government of institutions for the propagation and supply of animal vaccine. For such services or stations, placed say in London, Liverpool, Edinburgh, and Dublin, would meet the want felt. Universal experience, sanctioned by Dr. Seaton and other authorities, proves that by the arm-to-arm method vaccine loses its power of inoculability and becomes otherwise altered. Hence the advice given to public vaccinators to change their source of lymph (the vaccinifer) when this is observed; but under such circumstances a supply of animal vaccine would be most acceptable and, we believe, most advantageous. Those medical men and those of the public who desire vaccination from the heifer would thus have the opportunity. I trust, therefore, that Dr. Martin’s able advocacy of animal vaccination will be followed by the introduction of this method *under Government support* both in this country and in America.

As regards the recent debate before the Metropolitan Counties Branch of the British Medical Association,* we have Dr. Greene of Birmingham, from personal experience, advocating animal vaccination because of the "advantages this method presents of an overflowing fountain of lymph of a relatively high standard of activity for the renewal of stocks at any time, when opinion or accident makes it requisite." He confirms for the most part the assertions I have made above, regarding the various excellent qualities of animal vaccine, and he considers the uncertainty of animal lymph would "be of no consequence with a good stock, with skill and judgment in cultivation, and with the limitations of the method" he specifies.

There is not the slightest doubt that the public vaccination arrangements which were legalized in England in 1867, and have been assiduously carried out there since that date, have improved *immensely* the vaccination and consequent protection of the population. Dr. Seaton, too, as the principal initiator and propagator of this reform, may indeed congratulate himself on the happy results; but that thus "we are in possession of the means, if we rightly use them," wherewith "severely fatal epidemics should by-and-by be made to cease from amongst us," is an admission which few will concede who have practically weighed the subject. As a public vaccinator under the Act of 1867, and with the experience of nearly ten years, during which this town has twice suffered from epidemic smallpox, I do not think existing arrangements, much less so the vaccine generally employed are sufficient for the efficient protection of the population against smallpox. It is very gratifying to learn from Dr. Seaton that 95 per cent. of the whole population of England are accounted for as vaccinated, or dead or unsuitable for vaccination; but inasmuch as only two-thirds of these have been vaccinated at the public stations where specially qualified persons, duly inspected results, and thoroughly active lymph (obtained by arm-to-arm vaccination) are to be found, there is still too large an amount of soil open for the propagation of smallpox. "It is certain," says Dr. Seaton (*British Medical Journal*, 22nd June 1878, p. 888), "that our defences against smallpox, as dependent on the quality of vaccination, are much in advance of what they were, and as time goes on, the proportion of the population not merely vaccinated, but thoroughly vaccinated, must be a constantly increasing proportion. . . . So far as concerns personal carefulness and a knowledge up to the science of the day, we have no right to suppose that the vaccination of

* *British Medical Journal*, 22nd June, 1878.

private practitioners would, as a rule, be found behind the public work ; but in regard to the arrangements most conducive to the success of vaccination, private practitioners must necessarily stand at a disadvantage." While these public vaccinators have the advantage of a sufficiency of subjects wherewith to carry on arm-to-arm vaccination, they have the disadvantage that they know nothing of the parentage of the majority of the vaccinifers, and can judge of their suitability merely from the looks of the mothers and the appearance of the children and of the vesicles. It is just the reverse with private practitioners. Dr. Seaton, then, is carried away with the single idea, arm-to-arm vaccination carefully conducted is perfect, and is the only perfect form of vaccination. He nevertheless, like other instructors in the subject, gives certain directions for the renewal of the vaccine if it shows certain improper qualities. The seed is to be always the same, but the soil is to be changed. Vaccine removed from the cow more than eighty years ago by Jenner has been transmitted continuously from that time through human beings, sometimes through children of decidedly unhealthy parentage, sometimes through those in imperfect health, sometimes after purulent transformation has affected the lymph; and yet this fluid is to be considered purified, "due and effectively" protective, by being now transmitted with care through properly-selected healthy children.

If vaccine lymph, a most delicate organic fluid, has once been allowed to undergo pathological changes in the vesicles has been permitted, for example, to remain in the vesicle till, the ninth day, or even later, after vaccination, when suppuration has commenced to alter its composition, can it be supposed that it has undergone no deterioration? And if such lymph is used for vaccination, is it reasonable to conceive that the passage of this fluid through a child's body is sufficient to restore its purity, and to supply any protective power it may have lost? It is generally admitted that vaccination has been performed very carelessly in this country till within the last few years, that vaccine has been removed from vesicles undergoing suppurative changes and used for vaccination, that vaccination has been performed with lymph from imperfectly or improperly developed vesicles, and yet it is affirmed that if such lymph be carefully employed, hereafter it will produce results identical with those of the true virus, will be equally protective with the original cowpox. According to this view, the system of a child is made to serve the part, not only of a searching filter, but of a reproducing and restoring spring. If vaccination has been performed in

this country so that one half of those vaccinated are not in reality protected, seeing that 50 per cent. of all vaccinated persons present imperfect cicatrices, it is presumable that the "ordinary lymph" (not only the lymph used in certain parts of the country, but all the vaccine employed) has suffered from this inattention to the necessities of safe vaccination. Instead, therefore, of insisting that when this imperfect lymph is passed through a healthy child, it becomes pure vaccine, identical with the virus derived from the cow, it would surely be better, scientifically more consistent, to return to the original source of vaccinia, and in place of employing the virus of spontaneous cowpox, which is found to act very severely, to use heifer lymph, which "has all the qualities of that of the spontaneous disease, except its too frequent acrimony." By renewing vaccine lymph in this way, we admit that the lymph at present employed is imperfect, not in consequence of a continuous transmission through successive human generations, but that its efficacy has been impaired by its careless propagation in the human subject.—*Edinburgh Medical Journal.*

SCARLET FEVER AND MILK.

IN his Annual Report for 1878 on the Dorking rural district, Mr. E. L. Jacob chronicles the following interesting facts :

In the middle of the year there was a small, but alarming, outbreak of scarlet fever at High Ashurst, which is partly in the Dorking union and partly in the Reigate rural sanitary district. The first case appeared in a very mild and scarcely recognised form, on May 26th, in the family of G. J—, a farm labourer, some of whose children had lately had it in another part of the county, and had recently returned home. On May 29th an infant next door took it from contact with G. J—'s sick child. Between June 1st and 7th there were fifteen cases in three other distant houses, the inmates of which had not any communication with the infected houses or persons. They were all supplied with milk, however, from a private dairy, at which G. J— was cowman. He did not himself have the fever, and the milk was not taken into his cottage, but he had continued milking the cows during his child's illness. On the whole, it seemed probable that the specific poison of the disease had thus found its way into the milk, and had given rise to the earliest cases in these three houses. It was noticed that several families

escaped which consumed only the scalded skim milk from this dairy. On June 11th a young man was attacked in a fifth house. He was a lodger, whose landlady went out nursing infected children during the day, and probably carried the affection home in her clothes at night. On July 18th a child took it in a sixth house, into which it was apparently introduced by some lodgers, who had arrived from one of the infected houses on the 8th. Altogether there were twenty cases in seven houses, with two deaths, in that locality.—*Sanitary Record*.

ANTHRAX IN THE PIG.*

By HENRY G. ARMSTRONG, M.R.C.S., Medical Officer of Health, Newcastle-upon-Tyne; Medical Officer to the Newcastle-upon-Tyne Fever Hospital.

ON different occasions I have brought before the Society the multiform subject of anthrax as met with in my practice, and more than once have shown pathological specimens from pigs affected with what is considered to be the same disease. As the signs of anthrax in the pig differ considerably from those of the disease in other animals, and present many and complex varieties in different individuals of the same species, it may be of use briefly to put on record some of my experiences on the subject, and to indicate one or two points in connection with the specimens I last exhibited, which may perhaps help to throw a little light on the real nature of the affection, about which there is much difference of opinion.

Before doing this it may be well, for the sake of such of the members of the Society as are not required (like myself) to decide on the fitness of flesh for human food, and therefore do not study the diseases of animals killed for the table, to mention some of the diseases with which anthrax is commonly confounded. Erysipelas, scarlatina, enteric (or typhoid) fever, and cholera, are names for distinct and easily recognisable affections in the human being, but are all applied in the pig to what is probably none of these, and is certainly described by many authorities as being anthrax. "Red soldier" and the "blue sickness" are among its more common popular names. The dealers almost invariably try to make out that the skin appearances in such cases are due to cold, and are of no moment, and that the pigs have not died (for they do die very soon, if not killed in the hope of saving their bacon)

* Read before the Northumberland and Durham Medical Society.

from disease, but from mutual suffocation in their attempts to keep themselves warm, &c.

The most common form of anthrax in the pig is that characterised by erysipelatoid eruption, specimens of which have been before the Society. The characteristic deep cherry-red hue of the skin appears generally as a widish blush on different parts of the body, more particularly the back and inner surfaces of the thighs; the parts so coloured are raised above the level of the surrounding skin; the redness at first disappears under pressure, but afterwards becomes persistent, and does not fade after death, which in the natural way supervenes early, sometimes in a few hours from the first appearance of ailment.

One very remarkable pathological feature of these cases is the tarry condition of the blood and the engorgement (perhaps *post-mortem*) of the vessels of all sizes and parts, but especially in the neck and head, as seen on decapitation, so as to give a dark appearance to the muscles, and even to change the fat to a disgusting grey mass. This condition of the blood, and the unvarying tendency of all the tissues to rapid decomposition, are characteristic of anthrax. The spleen in the few cases where I have been able to get a look at that organ (for the viscera are generally made away with as early as possible) is not, however, dark and hypertrophied, as in the anthrax of cattle. Sometimes the erysipelatoid blush extends to a universal redness of the entire surface, so as to account for the use of the term "scarlatina," which disease it at first sight closely resembles. In such cases as the above the fat beneath the skin is usually pink in colour, which appearance continues after death, as certain specimens in my possession show. I believe that this disease is not scarlet fever—first, because the examples I have seen of it have occurred in herds affected with other forms of anthrax; secondly, because in the cases I have observed there has not been any special throat lesions, such as are pathognomonic of ordinary scarlet fever in man; and, thirdly, because in some of the cases where I have been able to examine the intestines, lesions characteristic not of scarlet fever but of anthrax have been found.

With the exception of the cases presently to be referred to, so far as my experience goes, there have been no abscesses, tumours, spots, parotid enlargements, or intestinal ulcers in any of the cases, but the disease is evidently highly contagious. I have neither regarded it as scarlet fever nor ordinary erysipelas.

Mr. Vacher, Medical Officer of Health for Birkenhead,

whose opportunities of observation in these respects are exceptional, describes "pig typhoid" as a disease distinct from anthrax, but considers that although ulcers of the intestine are common in his experience of the disease in pigs, the term "pig typhoid" is not appropriate, for in some instances where the external appearances have been marked, there has been no ulceration of the gut at all, and we know that this last-named lesion is (correctly, or the reverse) usually regarded as the *sine quâ non* of the disease called enteric or typhoid fever.

My own conclusions, already given, are based on observations made during the past five years, and almost exclusively refer to pigs brought from Ireland. The transportation of stock from America to the English markets, and to that of Newcastle among others, has brought with it a new experience to myself as regards anthrax in the pig, of which I have recently shown to the Society specimens from two animals, along with a specimen (probably Irish) of "red soldier," such as I have hitherto been accustomed to. The lesions of the disease in the pigs of the one country contrast with those of the other.

One of the American pigs (both of which came under notice on October 22) was spotted all over with an eruption of livid—almost black—hard prominent papules, of different sizes, from that of a barleycorn to that of a shilling, and in some parts spots of medium size were disposed at the rate of about one to every square inch. Between the hock and flank of one side were three soft swellings containing a watery, turbid, yellow serum, with some loose shreds of tissue. A fourth swelling on the belly, of the size of half a hen's egg, contained black blood effused into the areolar tissue and clotted in the middle of the tumour. The contents of each tumour were within a sort of cyst. There was no "red soldier" whatever.

The second American pig resembled the first in having spots on shoulders and sides—though not so many as in the preceding instance—and one tumour which was in the parotid region. It differed from the other in having patches of "red soldier" on belly, neck, and shoulders; in the latter region the hard, raised, livid spots were apparent on the reddened surface. In neither of the pigs was the blood "tarry," nor were the cut surfaces on decapitation abnormal.

A third American pig (noted on October 14) had deep "red soldier" on the back, and also dark red and livid spots on the sides, the latter being very numerous, and varying from mere points to patches of the size of a threepenny-

piece. This pig had a parotid abscess. The intestines had been removed before the inspection.

The pig, supposed to be Irish, had none of the foregoing abnormal appearances, except patches of "red soldier," which were disposed on the buttocks, sides, and neck. On decapitation the cut surfaces were found to be rather dark, and the blood was tarry. The subcutaneous fat was of a pinkish tint. The intestinal mucous membrane, with the exception of about the last six feet, which were normal, was congested, but nowhere ulcerated.

We have in the cases just described examples of—(1. American.) Spots without red skin. Intestines not examined. The disease corresponds to that described as anthracoid angina by Fleming. (Query: so-called "pig typhoid?"). (2.) Spots with red skin, and parotid tumour or abscess. (3, Irish?) Red skin without spots, tumour, or abscess, but with intestinal lesion. (Query: so-called "pig scarlatina?") The first of these (spots without red skin) had several tumours, containing blood and puriform liquid, which are uncommon in enteric fever, at least in the human subject; the second (spots with red skin) had a parotid abscess in one instance, and a tumour (probably a commencing abscess) in the other; and the third was a disease resembling human scarlet fever in one particular only, and differing from it in having a lesion highly characteristic of anthrax.

In the Privy Council Order, dated September 17, 1878, which is termed also the "Typhoid Fever of Swine Order, 1878," it is laid down that typhoid fever of swine (otherwise called soldier disease, or red disease), shall be deemed to be a disease (under the Contagious Diseases (Animals) Act, 1878), for the purposes of slaughter and compensation, notice of disease, Orders of Council, power of police and power of entry; and also (under the Animals Order, 1878), for the purpose of movement and exposure, movement of dung, burial, or destruction of carcasses, and general provisions; as also for cleansing and disinfection.

The foregoing is a clear expression of opinion on the part of the veterinary advisers of the Privy Council: first, that red soldier in the pig is enteric or typhoid fever; and, second, that it is highly contagious or infectious. I submit, in opposition to this, that sufficient evidence as to the identity of the two diseases has not been adduced, the presence of ulceration of Peyer's glands of the small intestine not being proof of enteric fever in the human subject, as Dr. John Harley and others have shown; that the ready communicability of red soldier is evidence against the view of its

being enteric fever; that the spots on the skins of animals affected with the so-called "pig typhoid" are in size, colour, number, and general character, altogether different from the lenticular rose-coloured eruption of enteric fever; and that, in fine, the two names represent two separate diseases.

NOTE.—Since the foregoing was written, Dr. Klein's extensive and carefully prepared report on this disease has been published, which gives the decided opinion that the affection is neither erysipelas, splenic fever, nor typhoid (enteric) fever. Dr. Klein proposes to name it "infectious pneumo-enteritis of the pig." (See *Sanitary Record*, vol. x, No. 244, p. 132.)

[It may also be noted, though this is hardly germane to the subject of the paper, that some very valuable researches by MM. Pasteur and Toussaint have recently been published, which seem to show that anthrax may be communicated to animals by food containing the germs of Bacteria, but only when the animals are wounded or become injured in feeding. It is remarkable that both observers have arrived in different ways at precisely the same conclusions.—ED.]—*Sanitary Record*.

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF THE COUNCIL, HELD JULY 1st, 1879.

Present :—The President (Professor Williams), General Sir F. Fitzwygram, Professor M'Call, Professor Pritchard, Mr. Anderton, Mr. Batt, Mr. Blakeway, Mr. Cartwright, Mr. Collins, Mr. Cuthbert, Mr. Freeman, Mr. Gowing, Mr. Greaves, Mr. Harpley, Mr. Morgan, Mr. Reynolds, Mr. Robertson, Mr. Taylor, Mr. Whittle, Mr. G. Williams, and the Secretary.

The Secretary read the notice convening the meeting.

The minutes of last meeting were read and confirmed.

Correspondence.

Letters were received from Professor Simonds, Professor McCall, Professor Walley, Messrs. H. J. Cartwright, George Williams, and Mr. James Moon, acknowledging their re-election as vice-presidents.

A letter was received from Mr. Menzies, of the Highland and Agricultural Society, acknowledging the receipt of six copies of the Supplemental Charter; from Mr. E. B. Nicholson, of the London Institution, Finsbury Circus, in which he desired to present to the library of the College a copy of his work on 'The Rights of an Animal.'

On the motion of *Mr. Cartwright*, seconded by *Mr. P. Taylor*, a vote of thanks was awarded to Mr. Nicholson for his presentation.

A letter was also received from Mr. Dray, declining the honour of his re-election as vice-president and treasurer, which step he had, he said, taken after mature deliberation.

The Secretary remarked that Mr. Dray had been for a great number of years a very useful member of the Council, and it would now be necessary in consequence of his resolution, to elect both a vice-president and treasurer.

Reports of Examiners

At the meetings of the Scotch Section of the Court of Examiners, held in Edinburgh and Glasgow on April 16th and 17th, three students from the Edinburgh Veterinary College passed; and sixteen students from the New Veterinary College passed and obtained their diploma.

Also at another meeting, held in Glasgow on April 17th, seven passed and two were rejected.

At the meetings of the Scotch Section of the Court of Examiners, held in Edinburgh on the 14th April, for "the first examination," from Edinburgh Veterinary College, seven passed and two were rejected; and from the New Veterinary College, Edinburgh, ten passed and one was rejected. From the Glasgow Veterinary College, two students passed.

At the meetings of the Scotch Section of the Court of Examiners, held on April 18th, for the "second examination," from the Edinburgh Veterinary College, six passed and seven were rejected; and at a meeting on the same day, the same examiners being present, from the New Veterinary College, three passed and two were rejected; also for "the second examination," sixteen passed and two were rejected.

At the meetings of the Court of Examiners, held at Glasgow, on April 21st and 22nd, for "the second examination," from the Glasgow Veterinary College seventeen passed and ten were rejected.

Mr. Harpley, alluding to Mr. Dray's letter of resignation, expressed himself as extremely sorry that such an old and faithful servant of the Institution had sent in his resignation, and he thought it was the duty of all the members of the Council to try and induce Mr. Dray to reconsider his decision. He would move a resolution to that effect.

Mr. Gowing thought that there must have been some private reason or some offence taken on the part of Mr. Dray before he had come to such a conclusion, and he was of opinion that, until the real cause of the resignation was known, Mr. Dray should not be further solicited in the matter. He felt disposed to elect another treasurer, and would propose in room of Mr. Dray, General Sir F. Fitzwygram.

General Sir Frederick Fitzwygram said he had great pleasure in seconding Mr. Harpley's motion. He thought it would not only be a courteous act, but almost a duty on the part of the Council to ask Mr. Dray to consider his refusal. Mr. Dray was not only an old member of the profession, but he was one who had stood very high in the profession as an honorable man (applause), and had fulfilled his duties well and faithfully. In addition to these considerations, Mr. Dray resided in London, which was a most important consideration. Mr. Dray was one of the most useful members of the Council, and he had great pleasure in seconding the motion that that gentleman would re-consider his decision.

Mr. Gowing said he still adhered to his views in the matter.

Mr. Morgan thought that Mr. Dray ought not to be pressed to reconsider his decision, and proposed as an amendment, that Mr. Dray's resignation be accepted.

Mr. Gowing seconded the motion.

Mr. Greaves thought it would have been more satisfactory to the Council if *Mr. Dray* had given his reasons for resigning. He also thought that if the system were commenced of requesting gentlemen to withdraw their resignations, it might be continued *ad infinitum*. It had only been in rare instances that the Council had resorted to such a course. He presumed that *Mr. Dray* had resigned after due deliberation, and he (*Mr. Greaves*) was not one of those who would go hat in hand and ask *Mr. Dray* to reconsider his decision. He felt disposed to vote against *Mr. Harpley's* motion.

In the result, six members voted for the amendment and ten for the motion, the motion was therefore declared carried.

The Secretary read a letter addressed to *Dr. Dunsmure* by a student who had not presented himself for examination, and also another letter, of similar import, addressed to himself, in which the applicant asked for a return of the fee he had paid.

After some conversation, it was resolved that the Secretary be instructed to write to the effect that the applicant could again come up for examination, but that the fee could not be returned.

The Secretary read the following letter from *Professor McCall*, relative to *Mr. Crozier's* case :

“ *Mr. W. H. Coates*, Secretary, R.C.V.S., London.

“ *Veterinary College*, Buccleuch Street, Glasgow, April 30, 1879.

“ DEAR SIR,—*Mr. James Crozier*, a student of this College, enrolled under the ‘old rules,’ and rejected the second time at the ‘final examination,’ held here on the 17th inst., is anxious to attend another winter session, and come up again for examination in April, 1880. Apparently, the examinations for the diploma, under the old system, cease in July of this year; but in view of *Mr. Crozier's* intentions being carried out, will the Council of the R.C.V.S. grant him the privilege of presenting himself again and for the third time before the examiners in April, 1880?

“ I am, etc.,

JAMES MCCALL.”

The Secretary said he believed it was agreed that the examinations should extend to Christmas; and therefore it would be in January, 1880, when the examinations would take place, but not in April.

Professor McCall said there might not be a body of examiners competent to deal with *Mr. Crozier* in January, and therefore it would be a great advantage to him if he were allowed to come up in April.

Gen. Sir Fredk. Fitzwygram said it is well known to the Council that the trouble and expense of a duplicate system of examination was very great. With the assent of the three schools the time of the examination was fixed to January, 1880, and that was considered sufficient to cover every grievance. If the present application was acceded to there might be no end of similar applications; and he thought it advisable to stick to the rules.

The matter was then allowed to drop.

Appointment of Committees.

The following are the members appointed for the several committees for the ensuing year :

Finance Committee: Messrs. Cartwright, Greaves, Harpley, Moon, Morgan and Taylor.

Publication Committee: Professor Brown, and Messrs. Batt and Fleming.

House Committee: Messrs. Batt, Harpley, Professor Pritchard, and G. Williams.

College Fund Committee : Professor Brown and Messrs. Gowing, Harpley, and Whittle.

Parliamentary Committee : Professors Simonds, Brown, and Pritchard, and Mr. Cuthbert, General Sir Fredk. Fitzwygram, Mr. Greaves, Mr. Reynolds, and Mr. Taylor, with power to add to their number.

Library Committee : Professor Axe, and Messrs. Blakeway and Harpley.

Examiners for the Fellowship Degree.

Mr. Gowing proposed that the Board be reappointed ; but Mr. Harpley and Professor Williams declined, upon the grounds that they thought the honour ought to be participated in by other members of the College. The following gentlemen were then appointed, namely, Professor Duguid, and Messrs. Collins, Fleming, and the Dean or member of the College of Preceptors.

The Fitzwygram Prizes.

The Secretary read the report of the Fitzwygram Prize Examination.

General Sir F. Fitzwygram said there was no doubt that the number of competitors for these prizes had been somewhat unsatisfactory, and he wished to give notice that next year the competition for the "Fitzwygram prizes" would be limited to gentlemen who passed with great credit, but would be extended to members of the Royal College of Veterinary Surgeons who have held their diploma not more than two years instead of one year as heretofore. The number of marks necessary to pass on from the first to the second stage of the competition would be raised from fifty to seventy-five per cent. on the numbers allotted to each subject.

The Secretary intimated that two letters had been received from Professor McEachran, of the Veterinary College of Montreal, addressed to the Secretary of the Royal College of Veterinary Surgeons, in which he wished to lay before the Council a petition for affiliating the College at Montreal with the Royal College of Veterinary Surgeons.

The Secretary was instructed to write to the effect, that the Council had no right to affiliate under the Charter, and that the matter rested entirely with Her Majesty's Government.

The obituary notice was read.

On the motion of Mr. Gowing, the Secretary was instructed to send a letter of condolence to the family of the late Professor Varnell, whom Mr. Gowing described as a much-respected and worthy member of the profession.

Finance Committee.

The report stated that the vouchers and receipts for payments during the preceding quarter had been examined and found correct. The present liabilities amounted to £307 13s. 5d., which the Committee recommended should be discharged. This would leave a balance at the bankers of £389 16s. 1d.

On the motion of Mr. Batt, seconded by Mr. Whittle, the report was received and adopted.

Cheques were ordered to be drawn for the current expenses.

Certain improvements in regard to picture-frames, carpets, and mats, suggested by the House Committee, were relegated to that body for consideration.

A letter was read from Mr. Dyke Broad, of Bath, enclosing the sum of £2 16s., as a balance from the late West of England Veterinary Medical Society, and the sum of £2 4s., as a subscription from himself, to be added to the College Fund.

A letter was read from Mr. Thomas Moore, of 11, Upper Berkeley Street, Hon. Sec. *pro. tem.*, of a local society of Veterinary Surgeons, asking the use of the Board-room for their meetings.

After some discussion the Secretary was instructed to write to the effect that the Council were unwilling to grant the use of the Board-room for the purpose referred to.

The *Secretary* submitted a specimen of the diploma to be granted to the members of the Highland and Agricultural Society.

Mr. Collins gave notice of motion of alteration in Bye-law No. 4. The Army Veterinary Department numbered something like 150 or 160 members, and the majority of these were not at present in the position of recording their votes. There were at the present time over eighty members in India, and nearly twenty in South Africa; and these gentlemen were, to all intents and purposes, shut out from voting. His object in proposing an alteration in the bye-law was to enable them to record their votes. He proposed to add to the words "every member" the words "in the United Kingdom," and also "that in the case of members resident abroad it will suffice if they forward to the Secretary, in a prescribed form, so as to reach him seven clear days prior to the election, the names of not more than six gentlemen for whom they wish to vote."

The *Secretary* was about to read two letters from Professor Walley, when, on the motion of *Sir F. Fitzwygram*, seconded by *Mr. Taylor*, it was resolved that the letters be not read, on the ground that such a course was unusual, especially in a case where members of the Council could very well be present.

It was announced that *Mr. Fleming*, who was absent, desired that the consideration of the motion standing in his name should be suspended until the next annual meeting.

This concluded the business of the quarterly meeting, after which

A SPECIAL MEETING

was held for the consideration of certain alterations in the bye-laws.

Mr. P. Taylor proposed, pursuant to notice of motion, that Bye-law No. 37 be expunged. As it stood it provided that "No student shall be allowed to present himself before either section of the Board of the Royal College of Veterinary Surgeons for his first, second, or third examination more than three times." He considered this bye-law to be grievous, cruel, and unjust. In support of his views he adverted to the arguments he had advanced on a previous occasion when the question was mooted, and also combated the views then advanced by *Mr. Collins*, *Sir F. Fitzwygram*, and others. As a special proof of the injustice of the bye-law, he instanced the case of *Mr. Wallis*, which had been brought forward at the last annual meeting.

Mr. Gowing, while seconding the proposition, said he differed somewhat from the views of *Mr. Taylor*, and thought there should be some stimulus to the students in the shape of doubling the fees, after having been rejected on the third examination.

Mr. Greaves supported *Mr. Taylor's* motion, remarking that the students ought to have as many chances as were necessary.

Mr. Collins thought that none of the bye-laws ought to be tampered with without sufficient grounds. It had been said that the matter ought to be left to the schools; but with all due respect for the schools, he thought this view might be challenged. By the retention of the bye-

law the hands of the Principals of the Colleges would be very materially strengthened, because they would be able to turn round to the bye-law and get rid of any difficulty, knowing that if the student remained at the College he would not do himself, the College, or the profession any credit. The second argument that had been advanced by Mr. Taylor was that there was no such bye-law in the clerical, legal, or medical professions; but he would point out that the position of those professions was assured, and when the position of the Royal College of Veterinary Surgeons had reached a similar standpoint, then it would be time enough to abolish the bye-law. The profession could not afford to have any inefficient members in its midst. The next argument that had been used—and the one which, in his opinion, was the weakest of the lot—was that students, if they were rejected three times, would still continue to practise as quacks, and the country would be over-run with them. But he would ask whether it was not better that inefficient men should be known in the country to be quacks than that they should be palmed off on the public as efficient Veterinary Surgeons. The fraud would rest with the Royal College. The next argument was the sentimental grievance. It had been stated that the student would be ruined and would have no prospect of gaining a position in life and society, and all that sort of thing. These sentiments, no doubt, did great credit to his friend Mr. Taylor, who had a large heart and a warm nature; but he contended that the profession could not yet afford to indulge in sentimental legislation. The object of the Council was to raise the standard of the profession, and students knew what they might expect when they entered into the contest. If the idea were carried on to its logical conclusion, and the feelings of the students and their parents were exclusively and entirely studied, the result would be that the tone of the examinations would be lowered. If the bye-law were cancelled, he believed that a large percentage of idle, lazy, and perhaps dissipated students would be constantly hanging about the colleges, and that the principal incentives for them to work would be taken away. He had been told by some of the professors that students did not work so well now as they did in former times. For years past the object desired by the profession and advocated by the veterinary periodicals had been to raise the standard of education. The very name of education had become so hackneyed that one was tired of hearing it; the reason being that the profession was tired of words and wanted actions. With regard to what occurred at the annual meeting in regard to Mr. Wallis's case, it ought to teach them a severe lesson. He never saw a more humiliating spectacle than that of a member of the profession taking advantage of his position, and airing his grievances in public. There might be a great complaint that a verdict was snatched on that occasion, but the gentlemen assembled at the annual meeting formed a very small fraction of the profession, and he submitted that if the question had been put before the profession generally in its proper bearings, and different lights, the verdict would have been different. What was the immediate result of that? No sooner had Mr. Wallis sat down than one of the oldest members of the profession got up and impugned the very honesty, integrity, and capacity of the examiners. What he meant was, that if students were rejected more than three times, it arose, not from the stupidity of the students, but from the stupidity of the examiners; and he ventured to say that the speaker would not have ventured to make such a statement as that if it had not been for what previously occurred at the annual meeting. He was of opinion that the abolition of the bye-law would prevent the realisation of the higher aspirations of the more

enlightened members of the profession. Whatever might be the fate of the question now being discussed, he hoped that the profession would not hereafter accuse the Council of being false to their true interests, and of being possessed of a rickety backbone. He moved as an amendment, that the bye-law stand as it is.

General Sir Frederick Fitzwygram, while somewhat acquiescing in the resolution arrived at on this subject at the general meeting, felt constrained to give his vote against the motion. He did not think the repeal of the law would be of the slightest advantage. It was not the object of the Council to admit into the profession incompetent or unqualified men, and he thought there was no one present who had watched the course of the examinations but would admit that if a man had had three chances and three rejections he was never likely to become a useful member of the profession. The rule had hitherto worked well. He had expressed his views on the subject, and would leave it in the hands of the Council.

Mr. Harpley referred to the circumstances under which the bye-law was made, and the time and trouble that had been taken before the Special Committee to inquire into the subject had arrived at its conclusion. The object of the Council at the time the bye-law was passed was more especially to get rid of a class of men who could never enter the profession, not having the ability to do so. He agreed with the views that had been advanced by *Mr. Collins* and *Sir Frederick Fitzwygram*, and would decline to vote for the repeal of the bye-law.

On the question being put to the vote, two members voted for *Mr. Collin's* amendment, and twelve for the motion, which was therefore declared carried.

Mr. Gowing gave notice of the following motion:—"Bye-law 36." "But should he not pass his third examination, then shall he pay—should he again wish to present himself—a fee of six guineas at each subsequent re-examination, and seven days prior thereto."

The President proposed the following alteration in bye-law 46:

"No examination shall be held unless there be nine candidates for one division of the examination; but if a board be assembled, and there be a candidate or candidates for another division, the examiners for which being within reach, then a board shall be constituted to examine such candidate or candidates."

He explained his reasons for the proposed alteration, which, he thought, would be not only in the interest of the students, but of the profession.

Sir Frederick Fitzwygram pointed out that the bye-law was passed after due deliberation, and with the view to raise the funds of the College, which at the time were at a very low ebb, and he asked the Council to adhere to the rule to have no examinations unless there were a sufficient number to pay the cost.

After some observations from the President, Professor Pritchard, and *Mr. Greaves*, *Mr. Harpley* seconded *Sir Frederick Fitzwygram's* amendment. It was ultimately agreed that the consideration of the question be postponed.

General Sir Frederick Fitzwygram moved an alteration in bye-law 7, which he said at present provided that the scrutineers shall be elected at the annual general meeting. The effect of the existing rule was that certain gentlemen who were good enough to come to the meeting were shunted to the outer rooms while the discussion was going on, and where they could neither see nor hear. It was proposed to alter the rule to read as follows:—"At a meeting prior to the annual meeting, the Council shall choose from among the members of the profession not less

than six persons to act as scrutineers in the matter of the election of the members of Council, &c." The object of that was that the scrutineers would be present an hour or two hours sooner than the time at which the annual meeting was held.

Mr. P. Taylor seconded the motion, which was agreed to.

The proceedings then terminated with a vote of thanks to the President.

NORFOLK AND EASTERN COUNTIES VETERINARY MEDICAL ASSOCIATION.

ON Tuesday, the 8th inst., the half-yearly meeting of the above association, was held at the Norfolk Hotel, Norwich, Mr. A. H. Santy, F.R.C.V.S., in the chair. Amongst those who honoured the meeting with their presence, were Dr. Jackson, F.R.C.S., of Plymouth, C. Williams, Esq., F.R.C.S., Norwich, Dr. R. J. Mills, Norwich, and J. D. Allman, Esq. There were also present Messrs. F. Low, G. G. Whincop, W. Shipley, L. Butters, S. Smith, J. K. Gooch, D. G. Bunting, H. Newson, T. E. Auger, R. Howard, E. Barker, T. B. Barker, F. Gooch (veterinary surgeon). Letters of apology were read from the Secretary (J. D. Overed), J. T. Bower, Professor Pritchard, and G. Fleming, Esq., F.R.C.V.S.

The minutes of the last meeting having been taken as read from the unavoidable absence of the Secretary, the Auditor's report was received, the association being in a very flourishing condition.

The officers for the ensuing twelve months were unanimously elected as follows:—Mr. A. H. Santy, F.R.C.V.S., President; Mr. W. Shipley, M.R.C.V.S., Mr. F. Low, M.R.C.V.S., Mr. E. Barker, M.R.C.V.S., as Vice-Presidents; Mr. J. D. Overed, M.R.C.V.S., as Secretary and Treasurer.

The President then introduced the essayist, *Mr. G. G. Whincop*, M.R.C.V.S., who read a very instructive and exceedingly interesting paper "On Matters of an Hereditary Nature in Relation to Disease," which was followed by an animated discussion, in which the medical gentlemen and most of the members took part.

Mr. L. Butters, M.R.C.V.S., described a case of pelvic abscess in the horse and his mode of operating on the same, with the result, the animal being viewed by the members.

The President demonstrated his method of extracting the molar teeth of the horse.

A cordial vote of thanks was accorded to the essayist, with a requisition that his paper might be forwarded to the veterinary journals for publication; and a vote of thanks to the President concluded a very pleasant and instructive meeting, in which the members of the medical profession expressed their entire satisfaction, and stated that in time, by unity of purpose and a steady application to scientific questions, as an association we should carry weight and make ourselves heard on the theories of the day which peculiarly and particularly affect the veterinary profession.

NEW MEMBERS OF THE PROFESSION.

At a Meeting of the Court of Examiners of the Royal College of Veterinary Surgeons, held July 3rd, the following students from the Royal Veterinary College received their diploma, and were admitted Members of the Profession :—

| | |
|-----------------------------------|---------------------------------|
| Mr. James Ingham | Shuttleworth, Bury, Lancashire. |
| — John Soulsby | Whitehaven. |
| — William Roach | Crediton, Devon. |
| — Ernest Edwin Batt | London. |
| — Herbert Hall | Wragby, Lincolnshire. |
| — Kirtlan Smith | Louth, Lincolnshire. |
| — Frederick John Short | Torquay, Devon. |
| — Chas. Harry Smyth Neate | Lewisham, Kent. |
| — Henry James Kelly | Foulness Island, Essex. |

Mr. Ernest Edwin Batt was distinguished by having passed with *Great Credit*.

The following students passed their *Second Examination* at the Meeting of the Court of Examiners on July 5th :—

| | |
|-------------------------------|--------------------------|
| Mr. William Frederick Wright. | Mr. Henry Martin Rule. |
| — Enoch Green. | — Frederick Wm. Whitney. |
| — Johnson Wm. Carlisle. | — John Darby. |
| — Wm. Francis Mulcahy. | — Frederick Elworthy. |

Messrs. Johnson Wm. Carlisle and Henry Martin Rule, were distinguished by having passed with *Great Credit*.

The following passed their *First Examination* at the Meetings of the Court of Examiners held July 7th, 8th, and 9th :—

| | |
|-------------------------------------|----------------------------|
| Mr. William Taverner. | Mr. Wm. Freeman Barrett. |
| — Richard Ephraim Liston Penale. | — William Davidson. |
| — John Sibary Wheatcroft. | — Alfred Charles Wilde. |
| — John Henry Penhale. | — Evan Wynne Williams. |
| — Tom Cooper Fletcher. | — Joseph Rowbotham Kinsey. |
| — John Albert Brown. | — Henry Charles Harrison. |
| — John Penberthy. | — Charles James Humphrey. |
| — Chas. Edward Cockram. | — Charles Curson Clark. |
| — Thomas Pottinger. | — John Thomas Holmes. |
| — Henry Hubert Roberts. | — John Halstead Wood. |
| — Thomas Joseph Patrick McGuinness. | — Arthur Everard Barlow. |
| | — William Green. |

Mr. John Sibary Wheatcroft distinguished himself by having passed with *Very Great Credit*, and Messrs. Richard E. L. Penhale, John Henry Penhale, John Penberthy, Chas. E. Cockram, Thos. Pottinger, Wm. Freeman Barrett, Henry Charles Harrison, and Charles Curson Clark, with *Great Credit*.

At a Meeting of the Scottish section of the Court of Examiners of the Royal College of Veterinary Surgeons, held in Edinburgh on July 14th, the following students passed their *Second Examination* :—

EDINBURGH NEW VETERINARY COLLEGE.

| | |
|----------------------|--------------------------|
| Mr. Wm. Summers. | Mr. Jn. Fisher Thompson. |
| — John Aitken. | — Jas. Joseph Mullally. |
| — Wm. Edward Livock. | — John Edwards. |

EDINBURGH VETERINARY COLLEGE.

Mr. John Teggart. | Mr. Robert Levie.
Mr. Johnson Gibbings.

Messrs. Wm. Ed. Livock, John Fisher Thompson, John Teggart, Robert Levie, and Johnson Gibbons, passed with *Great Credit*.

At the several Meetings of the Scottish section of the Court of Examiners of the Royal College of Veterinary Surgeons, held in Edinburgh and Glasgow on July 15th, 16th, 17th, 18th, and 19th, the following students passed their *First Examination* :—

EDINBURGH VETERINARY COLLEGE.

| | |
|------------------------|------------------------|
| Mr. John Roberts. | Mr. John Joseph Doyle. |
| — William Cassells. | — Robert Wm. Powell. |
| — Rd. William Burke. | — John Robt. Beech. |
| — Thomas Gilchrist. | — James Gibson. |
| — William Fairbairn. | — Patrick Dundon. |
| — John Alex. Thompson. | — Thomas Wright. |
| — John Beattie. | — Wm. Watt Dollar. |
| — John Bull. | — William Jas. Powell. |
| — Wm. Henry Jones. | — James Fitzgerald. |

EDINBURGH NEW VETERINARY COLLEGE.

| | |
|--------------------|--------------------------|
| Mr. William Woods. | Mr. James Bell. |
| — Henry Cooper. | — Jn. Francis Healy. |
| — Thomas Green. | — Frederick Eugene Rice. |
| — Isaiah Leather. | — Joseph McCauley. |
| — John Jones. | — John Metcalfe. |
| — William Graham. | |

GLASGOW VETERINARY COLLEGE.

| | |
|------------------------------|-------------------------|
| Mr. Wm. Davies Hunter. | Mr. Andrew Carnduff. |
| — Alexander Macadam. | — Michael Yates Lees. |
| — Jas. Somerville Bond. | — John Taylor. |
| — John Blackley. | — Archibald McNicol. |
| — Richard Ebbitt. | — Robert Black. |
| — Henry Rogers. | — Thomas McLay. |
| — Benjn. Hoadley. | — John Freeman. |
| — Alexr. Crichton. | — James Marsh Robinson. |
| — Jas. Fleming Alston. | — William Watt. |
| — Robert Roberts. | — Frederick Foster. |
| — Jas. Arthur Gosling. | — Gavin Alston Herron. |
| — Thos. Montgomery McCauley. | |

Mr. Wm. Watt Dollar passed with *Very Great Credit*; and Messrs. John Roberts, Rd. Wm. Burke, Jn. Alex. Thompson, Jn. Joseph Doyle, Jn. Robt. Beech, Wm. Jas. Powell, Wm. Woods, Thos. Green, Wm. Davies Hunter, Rd. Ebbitt, Henry Rogers, Robert Roberts, Jas. A. Gosling, John Taylor, John Freeman, Jas. Marsh Robinson, and Wm. Watt, with *Great Credit*.

CORRECTION IN THE REPORT OF THE NEW MEMBERS OF THE PROFESSION.—From the New Veterinary College, Edinburgh, in April last, the name of Mr. Kay Lees, of Oldham, Manchester, was omitted; and the name of Mr. Joseph Semple should have been "Temple."—WM. HY. COATES, Secretary.

COLEMAN PRIZE AWARD.

THIS Prize, which is annually awarded to the students of the Royal Veterinary College for the best essay on practical subjects relating to the foot or eye of the horse, or to the disease glanders, was awarded by the Governors at their meeting on July 8th to the writers of the essays having the following mottoes :—

Spes.—SILVER MEDAL. Mr. William Frank Smith.

In statu quo.—BRONZE MEDAL. Edw. Simpson Shave.

Invicta.—FIRST CERTIFICATE OF MERIT.—Wm. Alston Edgar.

SCHOLARSHIP AWARD.

On the report of the College of Preceptors and the Professors, the Governors of the Royal Veterinary College has awarded the scholarship of £25 *per annum*, tenable for two years to Mr. Charles Edward Cockram, Weymouth, Dorset.

THE FITZWYGRAM PRIZES.

THE notices and regulations with regard to the above prizes have been issued to graduates of the Royal College of Veterinary Surgeons, and to the students of the respective veterinary schools who had obtained their diplomas since April, 1879.

The Examiners appointed were Dr. Bailey Balfour, of Edinburgh; Mr. Dan Gresswell, Louth; and Mr. Richard Sam Reynolds, Liverpool.

The second part of the examination was held in Nottingham. The Superintendents were Dr. James Dunsmure, jun., and the Secretary of the Royal College of Veterinary Surgeons.

The names of six candidates were entered on the list. From the Royal Veterinary College two were entered. From the Edinburgh Veterinary College two candidates entered, both of whom withdrew. From the New Veterinary College, Edinburgh, two were entered.

The written examination took place in London and Edinburgh on Wednesday, April 23rd, and Thursday, 24th.

The following is the result, and the number of marks obtained by each competitor :

ROYAL VETERINARY COLLEGE.

| | Nos. | Anatomy. 300 | Physio- logy. 300 | Patho- logy. 300 | Che- mistry. 100 | Materia Medica. 125 | Botany. 75 |
|----------------------|------|-----------------|-------------------------|------------------------|------------------------|---------------------------|---------------|
| Mr. E. Simpson Shave | 74 | 280 | 195 | 250 | 51 | 87 | 29 |
| — Wm. Frank Smith | 73 | 255 | 150 | 245 | 65 | 70 | 36 |

NEW VETERINARY COLLEGE, EDINBURGH.

| | | | | | | | |
|----------------------|----|-----|-----|-----|----|----|----|
| Mr. T. Herbert Lewis | 81 | 205 | 210 | 230 | 85 | 96 | 47 |
| — Henry Wilson | 82 | 240 | 130 | 210 | 69 | 97 | 23 |

The only competitors who were eligible for the *vivá voce* examination were Messrs. E. Simpson Shave and Wm. Frank Smith from the Royal Veterinary College, and Mr. Thomas Herbert Lewis from the New Veterinary College, Edinburgh.

The *vivá* examination took place at Nottingham, on Monday, June 9th.

The report of the *vivá voce* and practical examination were as follows :

| | Nos. | Diagnosis of Disease. 200 | Examina- tion for Soundness. 200 | Selection of Horses for Specific purposes. 100 | Shoe- ing. 100 | Total. |
|------------------------|------|---------------------------------|---|--|----------------------|--------|
| Mr. Edw. Simpson Shave | 74 | . 180 | . 190 | . 75 | . 200 | . 645 |
| — Thos. Herbert Lewis | 81 | . 180 | . 180 | . 75 | . 200 | . 635 |
| — Wm. Frank Smith | 73 | . 180 | . 170 | . 100 | . 95 | . 545 |

| | First Examination. | Second Examination. | | |
|------------------------|-----------------------|------------------------|---|------|
| Mr. Edw. Simpson Shave | . 892 | . 645 | = | 1537 |
| — Thos. Herbert Lewis | . 873 | . 635 | = | 1508 |
| — Wm. Frank Smith | . 821 | . 545 | = | 1366 |

RESULT :

1st. Prize.—Mr. Edward Simpson Shave . . £50.

2nd. Prize.—Mr. Thomas Herbert Lewis . . £30.

3rd. Prize.—Mr. Wm. Frank Smith . . £20.

WM. HENRY COATES, *Secretary*.

ANATOMY.

Marks.

- 50 I. Describe the relations of the parotid gland, with special reference to opening of an abscess in this region.
- 50 II. Describe the exact relations of the metacarpal and plantar nerves at the seats of operation for neurotomy.
- 50 III. Describe the relations of the urethra of the horse and the mare, with special reference to the passing of a catheter in both.
- 50 IV. Describe the frontal and maxillary sinuses, with special reference to trephining.
- 50 V. Describe the anatomical relations of the tendons and ligaments of the fore and hind legs of the horse at the common seats of strain.
- 50 VI. Describe the anatomical relations of the structures at the seat of poll-evil and fistulous withers, with special reference to operative measures.

300

QUESTIONS IN PHYSIOLOGY.

- 100 I. Describe the various influences in operation for the maintenance of the blood circulation, state which of them you consider to be vital, which chemico-vital, and which mechanical.
- 100 II. State what structures of the horse and ox, name the function (*inter alia*) of protecting more vital tissues from the deleterious influences of concussion.—Give an example of each kind.
- 50 III. Enumerate the functions of the cranial nerves. State which of them are nerves of special sense, which of common sensation, which of motion, and which compound function. Describe the several functions of each compound nerve.
- 50 IV. Describe the function of rumination and the inferences you deduce therefrom in regard to the system of feeding ruminants.

300

PATHOLOGY.

- 50 I. Counter-irritation and bleeding have in great measure been superseded by milder treatment, What has been the cause of the change of opinion expressed in this change of practice?
- 50 II. Describe the operation of firing of the horse, with its physiological effects and estimation of its advantages.
- 50 III. What are the chief indications to be held in view in the treatment of epizotic diseases.
- 50 IV. What value do you attach to the use of the thermometer in the diagnosis and prognosis of disease?
- 50 V. Discuss the relative merits of Professor Lister's antiseptic treatment and the old treatment by digestives in the case of extensive lacerated wounds in the horse.
- 50 VI. Discuss the treatment you would adopt in a case of colic, and in a case of enteritis in the horse.

300

MATERIA MEDICA.

- 20 I. By what sensible character may aconite root be distinguished from roots which resemble it? What are the preparations of aconite, and their therapeutic uses?
- 20 II. By what means and by what chemical change is ratafia oil obtained from bitter almonds? What is its active ingredient? How is the existence of this ingredient proved?
- 20 III. What is the action of permanganate of potash and of charcoal on organic substances? What therapeutic applications are founded upon it?
- 25 IV. How may the leaves of belladonna, foxglove, and hemlock be distinguished, each, from leaves which resemble them? What is the action of foxglove on the circulation, and what are the various therapeutic applications founded upon it?
- 25 V. Enumerate the chief astringents derived from the vegetable kingdom. State the source of each and the nature of each.
- 15 VI. What are the physical and chemical differences between the seeds of black and white mustard? What is the active ingredient of the former? How is it formed?

125

CHEMISTRY.

- 20 I. What is the chemical composition of fat? What are the most common fats? How is soap prepared from them? What is the difference between a hard and a soft soap?
- 15 II. What are the oxides of carbon? Give two methods of preparing each.
- 20 III. How is phosphoric acid prepared from bones, and also from phosphorus?
- 20 IV. How is metallic lead obtained from galena? How is silver extracted from lead?
- 25 V. Define the term sugar. State what you know of the different kinds of sugar. How is pure alcohol obtained from sugar?

100

BOTANY.

- 15 I. How do fluids from the soil enter the roots and ascend through the plant? How is the capacity of the plant for continued absorption maintained?
- 12 II. What substance causes the green coloration of leaves? In which tissue, and in what form, is it present? What function in the plant economy does it perform?
- 10 III. In what respect do typical fruits of leguminous and of cruciferæ differ from and resemble one another?
- 20 IV. Give an account of the life history of a moss.
- 10 V. Describe the structure of a stem in a fern.
- 8 VI. Give the characters of the compositæ.

75

DICK'S VETERINARY COLLEGE, EDINBURGH.

PRIZE AND HONOURS LISTS.

SUMMER SESSION, 1879.

Chemistry.—Gold medal, Wm. Watt Dollar; silver medal, Jno. J. Doyle; third, R. W. Burke. Honour certificates—John Robt. Beech, Clement Burston, Patrick Dundon, John A. Thompson, Wm. J. Powell, Thomas Wright, Wm. Fairbairn.

Materia Medica and Toxicology.—Silver medal, R. W. Burke; second, Wm. Watt Dollar. Honour certificates—Jno. J. Doyle, Wm. H. Jones, Thos. Wright, J. R. Beech, P. Dundon, J. A. Thompson, Jno. Roberts, W. J. Powell.

Botany.—Silver medal, Wm. Watt Dollar; second, J. R. Beech. Honour certificates—R. W. Burke, W. J. Powell.

Junior Anatomy.—Silver medal, W. W. Dollar; second, R. W. Burke. Honour certificate—J. J. Doyle.

Practical Histology.—Honour certificates W. W. Dollar, Jno. Roberts, R. W. Burke, Jas. Geo. O'Donel.

Best Essay on the Entozoa of Domestic Animals.—Silver medal, R. W. Burke; second, Robt. Lerie.

GLASGOW VETERINARY COLLEGE.

THE summer session of this institution terminated on Tuesday last, and on Friday and Saturday the examinations for the diploma of the Royal College of Veterinary Surgeons were conducted within the museum of the College. The board of Examiners included the following gentlemen:—Professor Alexander Crum Brown, Dr. Andrew Wilson, University, Edinburgh, Dr. Dunsmure, Edinburgh. The following gentlemen were also present as *ex-officio* members, viz.:—Principal M'Call, F.R.C.V.S.; Professor Knox, M.A., M.B.; Stephen Cooke, F.C.S.; and James Macqueen, M.R.C.V.S., Glasgow Veterinary Col-

lege. Twenty-six students presented themselves for the first professional examination, and of this number twenty-three were successful in passing a highly creditable examination. Messrs Roberts, Gosling, Rogers, Ebbitt, Hunter, Freeman, Taylor, Robinson, and Watt, passing with great credit. Medals granted by the Highland and Agricultural Society of Scotland, Principal M'Call, and certificates of merit granted by the College were awarded in the different branches of study as follows :

Botany.—Gold medal, Mr. Henry Rogers, Bombay, India ; silver medal, Mr. John Taylor, Cathkin. First-class certificates—Mr. John Freeman, Dublin ; Mr. Richard Ebbitt, Dunleer, Ireland. Second-class certificates—Mr. J. Gosling, London ; Mr. M'Lean, Glasgow ; Mr. R. Roberts, Colwyn, Wales.

Chemistry.—Gold medal, Mr. James Gosling ; silver medal, Mr. Henry Rogers. First-class certificates—Mr. Richard Ebbitt, Mr. John Freeman, Mr. A. Crighton.

Materia Medica.—Gold medal, Mr. John Freeman ; silver medal, Mr. Robert Roberts. First-class certificates—Mr. James Goslin, Mr. Henry Rogers, Mr. James Robinson, Bamford. Second-class certificates—Mr. John Taylor, Mr. Benjamin Headley, Carlisle ; Mr. Thomas M'Lay, Glasgow.

At the close of the lectures, on Tuesday, the students assembled in the lecture-room, under the presidency of Principal M'Call, when Mr. Campbell, on behalf of his fellow-students, in a graceful speech, presented Professor Cooke with a handsome silver jug as a mark of their appreciation of his ability and merit as lecturer on chemistry and botany.

PARLIAMENTARY INTELLIGENCE.

CRUELTY TO ANIMALS BILL.

HOUSE OF LORDS, *Tuesday, July 15th.*

Lord Truro having presented a large number of petitions against vivisection, proceeded to move the second reading of this Bill, which he stated was for the purpose of supplying a defect in Martin's Act, which applied only to domestic animals, and to put a stop to vivisection.

Earl Beauchamp said the question had been most fully discussed after the report of the Royal Commission, and Parliament had deliberately decided upon the system of licence which now prevailed, and he should object very strongly to make any alteration in that law until it had a fairer trial than had yet been accorded to it. He moved the rejection of the Bill.

The *Earl of Shaftesbury* supported the Bill, which he said had become necessary from the failure of the Act of 1876. He believed the practice of vivisection was as unnecessary as it was cruel. He looked upon the lowest animals as beings for the treatment of which we were answerable to Almighty God. He cordially supported the second reading of the Bill.

The *Bishop of Peterborough* said that after giving much consideration to the question he had come to the conclusion that the guarded practice of vivisection under the existing Act was for the benefit of human life, and that to introduce a system of licences would be injurious by removing the safeguards that now existed, and tend to produce the very cruelties that the Bill was intended to put an end to.

The *Earl of Carnarvon* expressed his opinion that if the Act of 1876

were fully carried out it would be so effectual that there would be no necessity for the introduction of the Bill.

Viscount Cardwell, having been chairman of the Commission, should give his unhesitating support to the amendment of the noble lord opposite. He quite admitted that the Commission were not scientific men or connected with the medical profession, but at the same time they certainly approached the subject wholly unprejudiced in favour of vivisection, and if they had not paid a proper regard to the medical evidence they never would have come to the unanimous report which they had, and the existing Act would not have been passed. With regard to the operation of the Act, he thought it had been satisfactory, and said that the report of the inspectors under the Act had proved conclusively that many of the experiments had been absolutely painless.

Lord Aberdure, although at one time President of the Society for the Prevention of Cruelty to Animals, must oppose the Bill, which he regarded as so ill-considered and so hastily drawn that it would actually put a stop to vaccination.

After a few words from *Lord Waveney*, who thought that the Bill contained some elements of good,

Their Lordships divided, when the numbers were—

| | |
|------------------------------------|-------|
| For the second reading of the Bill | 16 |
| Against | 97—81 |

The amendment was accordingly agreed to, and the Bill rejected.

ARMY APPOINTMENTS.

WAR OFFICE, *July 1st.*

VETERINARY DEPARTMENT.—The undermentioned veterinary surgeons on probation to be veterinary surgeons:—Robert Moore and Francis Raymond.

OBITUARY.

ON July 10th, at Southend, Essex, John, son of Mr. Wm. Field, of Kingsbury, late of Oxford Street, aged forty-four.

After obtaining his diploma in April, 1856, Mr. John Field entered the army as veterinary surgeon. He was attached to the Royal Artillery but soon left the service, and shortly afterwards retired into private life.

ERRATA.

OUR attention has been directed by Mr. Hopkin to some errors which occurred in transcribing his paper on "Antisepticity," published in our last number.

Page 519, 24th line from the top, and also on page 520, 3rd line from the top, for "wine," read urine.

Page 520, 34th line, for "injection," read infection; and in 35th line, for "Professor Colin," read Professor Cohn.

Page 524, 12th line, for "iron," read potash; and page 529, 13th line from top, for "better," read either.



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Communications and Cases.

SYNOPSIS OF CONTINENTAL VETERINARY
JOURNALS.

By JOHN HENRY STEEL, Demonstrator of Anatomy at the
Royal Veterinary College.

(Continued from p. 556.)

Summary.—From the *Journal de Médecine Vétérinaire et de Zootechnie*, June, 1879. *M. Cornevin.*—Review of Italian journals comprising “Trichinosis in Italy;” “Case of Rabies in a Sow, Sucking Pigs not affected,” by M. Giamperi, V.S., Montegrimano (Marche); “Impediment to Parturition caused by a Membrane obstructing the Vagina of a Cow,” by M. Cantoni, V.S., Sorbolo (Parmesan); “On a new Species of Tapeworm of the Sheep,” by Prof. Rivolta, of the University of Pisa; “Observations on the Formative Process of Bony Callus in different Fractures of Bones of Man and Lower Animals,” by Prof. Ercolani, of Bologna; “On the Formation of Callus in Fractures of the Bones of Birds,” by Prof. Rivolta; “The Ancestors of the Horse.”

From *Recueil de Médecine Vétérinaire*, June, 1879. *Bulletin de la Société Centrale de Médecine Vétérinaire*. Sitting, May 8th, 1879. *M. Mathieu.*—“Special Touch Organs of the Dog.” *M. Nocard.*—“Treatment of Torsio Cervicis.”

From the *Journal de Médecine Vétérinaire et de Zootechnie. Revue Italienne*, by M. Ch. Cornevin. *Trichinosis in Italy.*

The Royal and National Veterinary Society of Italy held an extraordinary sitting on the 18th February last to receive a communication from M. Volante, municipal veterinary surgeon at Turin. This gentleman made known that Trichina had been discovered in certain hams imported from America, forwarded from Cincinnatti and sold at Turin. Professor Perroncito, of the Veterinary School, consulted by M. Volante, had found the parasite. There was, therefore, no doubt in the matter. It was estimated that about four hams per cent. were infested. M. Volante pointed out the measures of sanitary police taken in relation to American provisions. The society, after a vote of thanks to the veterinarians attached to the Municipality of Turin and charged with the duties of inspection, decided to address to the Minister of Home Affairs, on whom falls the superintendence of the Italian sanitary service in Italy, a *mémoire* on the general measures which should be taken with regard to the flesh of pigs of American supply which are sold in all the Peninsula. Also advantage was taken of the occasion to solicit the minister to investigate the case of municipalities of towns where the service for meat inspection is not organised, and to hasten the progress of its establishment.

Giornale della Societa reale e Nazionale di Medicina Vétérinaria.—*Case of Rabies in a Sow in Milk; the disease not communicated to the Young Pigs*, by M. Giamperi, veterinarian, Montegrimano (Marche).—On the 24th September, 1877, a peasant, named Gentili, was feeding a sow aged four years, and in an advanced stage of pregnancy, when a stray dog in passing threw himself on the animal and inflicted two deep wounds, one on the left nostril, the other on the lip. Proceeding on his way the dog shortly afterwards attacked two other sows, property of a M. Begni, and then took refuge in the territory of the little Republic of St. Marino, where he was slaughtered. As advised by the professional attendant, M. Begni isolated the two bitten animals and kept them under observation. In the progress of the twentieth day after the bite the two became dull, commenced to grunt incessantly, sometimes chewing the straw of their bedding, secreting a considerable quantity of saliva and refusing all food. The symptoms underwent change, becoming so much aggravated that on the twenty-fourth day, four days after the commencement of the attack, it became impossible to approach them, the sight of a man causing the highest degree of excitement. On the twenty-sixth day paraplegia set in, and death occurred that evening. The sow belonging to Gentili, the first bitten, littered on the evening

of the accident. There resulted eleven pigs, of whom four were soon smothered by the mother, who was in too narrow a sty and could not turn without difficulty. The other seven, freely fed by the mother, whose health remained perfect, grew rapidly. M. Giamperi had naturally forewarned Gentili of the probabilities of the appearance of rabies in his sow after the bite, so Gentili, to avert the evil which threatened him, had the animal blessed by the curé of the parish! a vain precaution, for one day—the fourteenth after the bite—appeared the symptoms of the inherent disease, such as have been described above. On the forty-fifth day, the fifth after the commencement of the disease, vomition and paralysis occurred, and she was slaughtered that evening. But strange to say, during the five days that the attack lasted, the sow continued to perform her maternal duties to her progeny, and did not attempt to bite them. The seven pigs after the death of their mother developed regularly and were all in a flourishing state of health up to the month of March. They were then six months old. Then an epizootic of angina charbonacea, which occurred in the locality, destroyed six of them. The seventh, the sole survivor, is now more than a year old, and has never shown the least sign of disease, and is a very fine animal. This interesting report by M. Giamperi is in confirmation of what we already know concerning the retarding influence of gestation or lactation on the evolution of rabies, and of the innocuousness of milk from rabid females, which may be from the virus of rabies being absent from milk, or from its destruction in the alimentary canal.

Giornale di Medicina Veterinaria Practica, January, 1879.
 —*Impediment to Parturition due to a Membrane which completely obstructed the Vagina of a Cow*, by M. Cantoni, Sorbolo (Parmesan).—Early in August, 1878, the author was called to visit a cow, aged about 4 years, with the second calf, and who had for two days ineffectually suffered from labour pains. Before the arrival of the veterinary surgeon she was seen by the inevitable empiric, who had diagnosed torsion of the womb, considered the case incurable, and advised slaughter of the patient. M. Cantoni introduced his hand into the vulva and soon felt a membrane placed vertically, which completely obstructed the natural passage and caused the vagina to terminate in a *cul de sac*. By scraping with his forefinger the practitioner made an opening in the centre of this septum, through which escaped a quantity of fluid. Then reintroducing his hand into the vagina he removed the membrane in portions and without difficulty; it

was readily broken down, and was about two centimètres thick. Shortly after the removal a small foetus, imperfectly developed and commencing to putrefy, was expelled. The mother made a good recovery. M. Cantoni draws our attention to the fact that though authors of treatises on obstetrics have noted the occasional occurrence of a hymen and the obstacle which it affords to parturition in primiparæ, they have not observed cases similar to this one recorded, since it occurred in an animal with her second calf. This was probably a new growth resulting from vaginitis. This case is similar to that recorded by M. Biot in the *Archives d'Alfort*, 10th May, 1879.

La Clinica Veterinaria, January, 1879.—On a new Species of *Tænia* of the Sheep (*Tænia ovilla*), by Professor Rivolta, of the University of Pisa.—In 1874, M. Rivolta described three species of tapeworm of the sheep, which he has distinguished by the position and form of the uterus. In the same year he also found in the sheep a *Tænia*, which seemed to him to have strong affinities with *T. denticulata*, and he has placed it under that heading, but without note of interrogation after it. During the last vacation he was visited by Professors Ercolani, Generali, and Perroncito. The latter gave him a *Tænia* of the ox for the museum of the school, and he was thus enabled to make a comparison with the specimens which he had already collected. Thus he determined that the parasite which he had found in the sheep was not to be placed in the species *T. expansa* nor in that of *T. denticulata*, but should be considered of a distinct species, of which the following is the description:—One of the specimens collected was 1·20 m. in length without the anterior or cephalic portion, so that its full length may be reckoned at 1·50 m. The proglottides of the posterior part are 6 mm. wide, and 1 mm. long. Each presents only a single sexual aperture on one of the lateral borders; from this emerges a penis. This opening alternates with that of the following segment, *i.e.* if the one has it on the right side, the following one will show it on the left, and *vice versâ*. The posterior border of each segment is imperfectly distinguishable from the anterior border of the next. The lateral margins are tolerably thick and rather white; they present two striæ, which cut off the more deeply coloured margins from the paler central part of the segment. Those margins which have a genital aperture are more convex than the others. M. Rivolta has not seen the head, but as the genital organs have furnished him with specific characters, he describes them and appends a figure to his paper. The

opening or genital pore is situated very nearly in the middle of the margin of the proglottis. The penis is almost always protruded, and is of moderate length. The vas deferens sometimes passes under the ovary, traverses the whole width of the proglottis, and communicates with the canals which come from the testicle of the opposite side. The testicles are formed of spherical cellules, and are situated at the lateral margins of the proglottis. On the margin which bears the penis there are about thirty-five, on the other side, they occupy the whole space externally to the longitudinal canal, and number from forty-five to fifty. The conduits from these testicles combine together to form the deferent canals which passes to the penis. The female organs comprise an ovary and a uterus. Each segment has one ovary situated beside the penis at a short distance from the longitudinal canal. It is formed by three small cellular lobules. The two small external masses, placed close together, are formed of small spherical cellules with an egg passage at one extremity, which communicates with the seminal reservoir. A little behind these two ovarian masses, but in contact with them, is another more marked group of cellules, which form the albuminous gland. The vaginal conduit commences at the swollen extremity of the penis or the præputial swelling, and takes its course to the ovary by passing underneath the longitudinal canal. It divides the margin of the segment into two very nearly equal parts, and separates the testicle from the folds of the deferent canals. In the neighbourhood of the ovary it presents an expansion, the seminal pouch, which is not always present. The uterus commences as a canal, at first straight, afterwards flexuous, which passes across the width of the parenchymatous structure of the proglottis, nearly from one longitudinal canal to the other. When it is filled with eggs it stretches as far as the borders of the segment, and the testicles seem to become atrophied. Thus, says M. Rivolta, to sum up our information, the species which has just been described ought not to be confounded with the two mentioned at the commencement of this note, and especially with *T. expansa* of the sheep. This last form is distinguished from it independently of the length and size of its proglottis, and of the greater shortness of its neck, by these rounded spots situated at the lateral margins of the segments visible to the naked eye (sometimes so even in specimens preserved in alcohol), and formed by the ovaries. Its component cellules are more developed than in the species which has just been described, and the seminal pouch is more voluminous. Finally, the

proglottides of *T. expansa* have two genital apertures, and the reproductive organs are double. Therefore, M. Rivolta deems it right to give the name *Tænia ovilla* to the new species which he has figured and described.

Giornale di Anatomia, Fisiologia et Pathologia degli Animali, November and December, 1878.—*Observations on the Callus-forming Processes in different Fractures of the Bones of Man and Lower Animals* (Mémoire by Professor Ercolani, of Bologna).—M. Ercolani commences by recalling to our minds that, in 1866, when the views of Ollier, Flourens, and Larghi on the sole influence of periosteum in the regeneration of bones and the formation of callus were uncontested, he published a first mémoire, in which he opposed these views which seemed to him inexact, and attributed to the cellules of the soft neoplasm the formation of callus. In 1867 the eminent surgeon, Billroth, published an important work on the 'Regeneration of Fractured Bones,' in which it was concluded "that all parts of the bone have a share in the formation of callus, not the periosteum alone; for, if this were so, and periosteum alone possessed the osteogenic property, consolidation of fractures could not occur at those points where strong tendons are attached, where there is scarcely any, if any, periosteum. But it does occur." In the ten years which have elapsed since the publication of his first mémoire M. Ercolani has made numerous observations and experiments on the same subject, which have confirmed him in some of the opinions which he advanced, and led him to modify others. These are the new and repeated observations which he has made known in his present work, which is the complement and corrective of that of 1866. We can only give the conclusions of this elaborate mémoire, which are as follows:

1. "I was exact in my observation, confirmed by Billroth, that the gelatinous juice called juice of Galen, which surrounds the extremities of the fragments of fractured bones, or, in other words, that all the cellular elements which are supplied by the parts around the fracture, form the soft callus, and later enter into formation of the osseous callus, but it is an error to attribute to them alone the latter formation, as was formerly done.

2. I was also correct in my statement, also confirmed by Billroth, that the periosteum near the seat of fracture takes no part in the formative process of the osseous callus, but was in error in stating that the periosteum of the new formation takes no part in production of the callus.

3. Periosteum in the normal state and in the adult subject exclusively repairs the wear and tear which life imposes on bones; when seriously injured, it loses its reparative and osteogenic power. That it may produce osseous substance in adults it must be either newly formed or irritated. In both these cases it cannot by itself produce a new bony substance, since it is indispensable that it come into combined action with young cells, over which it may exercise its ossifying influence. Periosteum can cover in long standing fissures without their self-obliteration. Ollier's doctrine is here at fault.

4. The physio-pathological processes of the elements enclosed in the Haversian canals are liable, as Billroth has said, to furnish an organisable exudate, but it is by no means, as that surgeon thought, to consolidate fractures, whether of long or of flat bones. The part which it was considered to play in uniting the fragments is purely imaginary. The exudate from the tissues and vessels of the Haversian canals does not in any respect differ from the matter thrown out by the parts around the fracture, such as the areolar, vascular, muscular, and tendinous structures.

5. The process of consolidation of a fracture is not constantly effected in the same manner, but varies according to the nature of the fracture and the bone which is broken. In some cases it results from the periosteum of the new formation and the exudate from the surrounding parts. In others it is due to the old periosteum, which has been irritated, and then the vessels of the bone furnish exudate and ossifiable elements. In others the periosteum remains inactive, and the partially or completely fractured bone is repaired by means of conversion into compact tissue of its cancellated structure. Often in this case there occurs a *cementing* or calcification rather than a true consolidation and regeneration of the fractured bone, for calcareous elements are alone used; this occurs especially in flat bones. In cases of complicated fracture the different processes above described may co-operate in bringing about repair, each one performing its own share."

Giornale di Medicina Veterinaria Pratica, September and October, 1878.—*On the Formation of Callus in Fractures of the Bones of Birds.* By M. Rivolta.—The preceding work of M. Ercolani has not convinced M. Rivolta, who in his turn has undertaken experiments specially on the bones of birds. He fractured the tibia, metatarsus, ulna, and femur of young subjects and of adults. As in the preceding article we simply give his conclusions:

1. The callus in young birds is formed always much more rapidly than in adults and old or sick animals.

2. Twenty-two hours after a fracture in chickens there is a proliferation of the deep parts of the periosteum, and forty-six hours after the new formation is already considerable.

3. Adults present no such characters in this lapse of time.

4. Seventy-two hours after the fracture of the bones of young fowls the callus seems to have acquired its maximum bulk. The Haversian canals enclose numerous cellular elements. Now commences conversion of connective elements into bone. The alteration of the cartilaginous cellules commences at forty-six hours, and is completed at about the fifth day.

5. Only the periosteum and the elements in the Haversian canals are involved in callus production.

6. The fibrinous coagulum of the extravasated blood does not assist in formation of the callus; its contact and pressure even hinder proliferation of the elements of the periosteum.

7. The repair of the cracks, which in simple fractures almost always occur at the extremities of the fragments, results from new formation of Haversian canals and by the continuity which is established between those of the bone and of the newly-formed tissue.

8. The callus, which is formed entirely at the extremities of the bones, is formed simultaneously by the periosteum and by the medullary tissue.

The author adds that in one case he has still seen cartilaginous substance twenty-seven days after fracture.

Giornale di Anatomia Fisiologia e Pathologia degli Animali, January and February, 1879).—*The Ancestors of the Horse*.—The time is not long past when we thought that the original country of the horse was Asia, and that from that centre of origination the noble animal became spread over the whole world, passing over to America at the time of the discovery and conquest of that continent. Naturalists have already been obliged to modify their opinions in this matter, and it is by no means impossible that the complete genealogical tree of the horse will show itself in America. Indeed, PROFESSOR MARSH, of New Haven, when exploring the mountains of Colorado, has discovered fossils of no less than *forty-four* species of Ungulata, which constitute an uninterrupted transitional chain passing to the horse. In Europe, we have found the Anoplotherium, the Hippoterium, the Palæotherium, the Anchitherium, the Hipparion, and *Equus fossilis* v. *Europeus*, which exhibit a gradual transition towards the horse of the present day, and are all of a greater size than the

American fossils of which we are about to speak. Among these latter the most ancient representative of the Equidæ is the *Eohippus*, which has been found in the lower strata of the Eocene. It had forty-four teeth, caducous molars not meeting the permanent teeth, ulna and radius distinct, five digits to the anterior limbs, of which only one touched the ground, three to the posterior limbs, of which all met the ground; its size was about that of a fox. In the upper strata of the Eocene is found the *Orohippus* which takes the place of the *Eohippus*. Its size was about that of a sheep; it had only four digits on the anterior limbs, and its last caducous molars met the persistent molars. In the Miocene deposits *Mesohippus* is met with, about the size of a wolf, with only three fingers on the anterior limbs, and a radius and ulna showing a commencing tendency to fusion. In the Upper Miocene occurs a fourth form, *Miohippus*, with three digits like the last form, but of the size of a Scotch pony; it is perhaps the *Anchitherium* of Europe. In the Lower Pliocene is found the *Protohippus*, and in its upper layers *Pliohippus*. These two animals closely resemble the horse, but are only of the size of the ass. They have a single hoof, the median one which meets the earth; the two lateral ones are not used for support, and in the *Pliohippus* they are quite rudimentary. The *Protohippus* evidently corresponds to our *Hipparion*. Through these stages we arrive at *Equus*, whose lateral digits are represented by the rudimentary metatarsals and metacarpals; his size was less than that of existing horses. Such is the genealogical tree of the American horse, but we are absolutely ignorant of the reason why he disappeared from that continent.—('Il Zootechnico,' April, 1879, R. B.)

We need give no excuse for translating the above review verbatim. The valuable matter which it brings under our notice, and the insight it gives us into the state of professional progress in Italy, will make us fully appreciate the valuable labours of Professor Cornevin. With regard to the last extract, we recognise in it an old acquaintance, for Professor Marsh's researches long ago reached this country, but they are sufficiently valuable to be brought directly under the notice of veterinarians. His latest observations on our domestic animals bear reference to the horse, for he contributes to the current number of the *American Journal of Science and of Arts*, a paper on "Supernumerary Digits in the Horse." He arrives at the conclusion that these differ in nature in different cases, sometimes being comparable to the supernumerary digits which occasionally appear

in man, in other cases being evidence of a tendency to recurrence to original type, cases of the former class must be extremely rare, we are not aware that this view has ever before been adduced in explanation of equine polydactylism.

We have read with interest a communication by M. Mathieu to the members of the Société Centrale, at their sitting of 8th May, 1879. "I wish to speak of a character possessed by most of our breeds of dogs, whether long haired or short haired. Seven small cutaneous eminences, of which six are disposed symmetrically in pairs, three on the right three on the left, on the side of the head of dogs and bitches, while the seventh occurs at the middle of the intermaxillary interval. From these small cutaneous eminences, which I will designate under the name appendages, emerge very long stiff hairs, similar to those which occur on the skin of the lips. The first pair of these small appendages (the superior) is situated above the eyes, of which they constitute imperfect eyebrows, placed somewhat near the median line. The second or middle pair occurs on the level of the posterior part of the zygomatic arch, the third on each side corresponds to the last molar. I have pointed out above the position of the seventh. These small eminences, which vary in size from that of a small to that of a large lentil, convey to the finger on pressure the sensation of hard and resisting points adherent to the skin. Sometimes the small prominence of the skin scarcely exists; it is then replaced by one or more long and stiff hairs; sometimes it differs in colour from that of the rest of the integument of the animal. The series of seven appendages is rarely incomplete; are we to consider these eminences as ornaments surmounted by long hairs, which specially serve to forewarn the animal of any closely neighbouring body? We deem these seven small bodies special organs of touch." At the same meeting was an interesting discussion on the subject of "Torsion of the Cervical Region." *M. Nocard* read a paper on the subject, terming it simply "Sprain of the Neck," and suggesting a new method of treatment. We give his own words:—Electrisation lasted for five days without appreciable result when I consulted M. H. Bouley concerning my patient, who said, "Here is a horse who requires a left lateral cervical ligament; why don't you give him an artificial one?" The idea seemed to me as rational as ingenious, and I hastened to put it into practice as follows. A tube of caoutchouc of the diameter used for purposes of continual irrigation was stretched between the head and the trunk. I fixed it in front at the summit of the poll, sufficiently protected

by padding to prevent excoriations, and behind to the median ring of a tightly drawn girth ; the elastic tube when applied to the convex side of the neck and moderately stretched, was passed six times from the head to the girth. It well performed the function which M. Bouley had briefly expressed ; it was a true "lateral cervical ligament," straightening the neck when the muscles of the right side did not contract, permitting flexion when they did contract, acting gently but in a perfect manner against the force, whether contractile or mechanical, which drew the head to the right. Every day I increased the tension of my artificial ligament, and every day I noted improvement. On the tenth day I could remove the appliance ; the deviation had completely disappeared, the head had resumed its normal position, and the animal had regained full liberty of movement in every direction.

A CASE OF IRREGULAR STRANGLES.

By the Same.

THE following case presents some interesting features, especially with regard to the morbid lesions found on *post-mortem* examination, which seem to me to add another link to the chain of evidence as to the true pathology of this variety of toxæmia.

The patient was a bay mare, five years old, who joined a cavalry regiment as a remount in the autumn of 1874, and was, shortly afterwards, admitted into the infirmary suffering from an attack of strangles. The submaxillary abscess did not discharge very freely, but the wound through which the pus was evacuated very quickly healed. She remained under observation for some time after this, and became daily poorer and poorer, until she was reduced apparently to the last stage of debility, when she manifested signs of cerebral disorder, as staggering and walking round her loose box continually in one direction. These symptoms were considered the result of weakness, and stimulating tonic doses were administered. She recovered under this treatment, but shortly afterwards had several attacks, of which sometimes the abdominal, sometimes the thoracic viscera, seemed to be the main seats. Having survived these she seemed to have recovered her natural spirits, and was daily turned out to grass, being brought into the stable at night.

June 25th, 1875.—This morning, was left in the stable, being dull and off her feed; pulse 84, wiry; respirations laboured, 42 per minute; auscultation detected the mucous râle throughout the whole of the lungs, particularly the left. Conjunctivæ very yellow; a thin yellow (bile coloured) fluid trickles from the nostrils. When placed in a loose box she immediately lay down and remained so for some time, with her muzzle protruded, occasionally looking round at her right side. Considering the congestion of the lungs and liver to be a manifestation of general failure of the constitutional powers, I gave a diffusible stimulant and ordered careful nursing.

On the 27th she ate a little bran mash and green forage, and the nasal discharge was more profuse.

On the 28th the pulse was weaker, 94 per min., and the respiratory murmur less distinct than before, on the left side being entirely obscured by the thumping sound of the heart, on the right imperfectly audible throughout; mucous membranes very yellow. A new feature of the case to-day is a very oppressed and paroxysmal cough. Add ζij Gent. Pulv. and ζss Tinct. Zing. to draught and apply mustard to sides.

June 29th.—Pulse 84, a little stronger; respiration less laboured; murmur audible throughout chest, and less mucous râle. Eats a little more forage; fæces of dark colour; mucous membranes very yellow; nasal discharge less profuse; extremities warm. Continue treatment.

30th.—Much more lively; pulse 78, stronger. Respiration 42; slight admixture of blood with nasal discharge. Careful nursing. Continue stimulant tonics.

July 1st.—Does not take much gruel; tendency to coldness of extremities. Pulse quicker and smaller.

2nd.—Pulse 84, scarcely perceptible. Breath fetid. Cough (which had disappeared) has returned with increased severity. Patient feeds a little. Respiration 30. Extremities cold. Schneiderian membrane of a livid colour. Fell down twice to-day. Slight bleeding from nostrils ensued. Continue medicine. 6 p.m.—Repeat drink.

3rd.—Pulse imperceptible at jaw; cardiac impulse scarcely perceptible. Respirations 18 per minute; respiratory murmur dull at lower part of chest. More hæmorrhage from nostrils; coldness of surface of the body and mouth; increased lividity of Schneiderian membrane; conjunctiva of a deep yellow. Stimulant dose. 9 p.m.—Died.

Post-mortem examination.—A small amount of dark coloured serum in peritoneal sac. *Bowels* very small, and

fixed by long-standing adhesions to abdominal walls, even vascular communications between the peritonea having been established. Similarly, the *spleen* was attached to the small intestines, and part of it had undergone a most remarkable change, presenting a dense fibrous structure, almost wholly composed of vessels of a bright *orange* colour. The *small intestine* was congested in some parts, and many of the lacteals running through the mesentery showed a beautiful natural injection with an inspissated purulent fluid; they were much enlarged, presented a beaded appearance, and a *bright orange* yellow colour. The *mesenteric glands* were enlarged, of a flesh colour, and indurated. Between the kidneys was a large collection of pus of an abnormally tenacious character, which, judging from its form and position, seemed to fill the *receptaculum chyli*; but if such was the case, the walls of that vessel were abnormally thickened, and its trabeculæ increased in size and strength. Proceeding along the course of the *thoracic duct*, in a forward direction, was another collection of pus of the same nature, and a third accompanied the splenic artery along its course towards the spine. The *blood* in the colic veins was remarkable for its gelatinous consistency and transparency; that contained in the heart and larger vessels had coagulated, forming a clot mainly of a straw colour. The *liver*, dark in colour throughout, on being cut into, presented a light brown surface with a number of the cut extremities of vessels emitting dark coloured blood. The *thoracic cavity* was almost filled with a dark coloured serous fluid, and every part of the pleura presented adhesions of a recent nature for the most part, but a few false membranes of a chronic nature. The *lungs*, extremely small in size, were indurated in some parts, congested in others, and gangrene was commencing in one or two places. *Kidneys* and *brain* normal.

This case affords, in addition to its specific character, a good illustration of death from defective supply of nourishing matter to the blood through prevented assimilation.

TETANUS (TRAUMATIC).

By the Same.

BAY gelding, second charger of Major D., Royal Artillery.

Dec. 30th.—About three weeks ago the patient ran away with a carriage, and striking against a lamp-post fell, coming

forcibly in contact with the kerb-stone, injuring the off shoulder and causing abrasions on the off side, behind the elbow, on the point of the hip, the point of the hock, and a punctured wound behind the near fore fetlock. These wounds are now in the stage of cicatrization, with the exception of the punctured wound, which is still suppurating. The jaws are fixed, allowing but slight separation of the incisor teeth. A profuse flow of diagnostically fetid saliva takes place when the lips are separated. The bowels are acting normally. There were sores on the lips and angle of mouth. Pulse hard and quick, 60 per minute. Respiration laboured, 20 per minute. Has been noticed to move with straddling gait behind for the last few days. Remove patient from a rather close loose box in which he is standing to a quiet commodious loose box; nurse and supply with gruel.

31st.—Pulse not so hard, and 48 per minute. Respiration more difficult. Patient much more lively. I hear he has suffered from megrims, and is therefore a bad patient. Bowels still acting nicely. \mathcal{R} Adipis \mathfrak{z} ij, Bellad. Ext. \mathfrak{z} ij; Ung. m. ft. Apply to wounds and well rub in over cheeks and between branches of jaw. Place Bellad. Ext. \mathfrak{z} iss between jaws. 1 p.m.—Not much change. Place Bellad. Ext. \mathfrak{z} iss in mouth. 6 p.m.—Patient will not even attempt to take gruel. Gruel, \mathcal{O} j; Bellad. Ext., \mathfrak{z} iss. Mix and administer as an enema. Repeat gruel enema at 10 p.m.

Jan. 1st.—Pulse 44 per minute. Respirations laboured, 60 per minute. Has passed a fair quantity of light-coloured pultaceous fæces. Muzzle protruded. 9 a.m.—Tongue very much swollen, due to congestion, result of strangulation. Cystic enlargement of the openings of the submaxillary ducts is very marked. Jaws slightly moveable and patient lively. Hand-rub extremities. Repeat bellad. enemas and applications to cheeks. 2 p.m.—Hind legs abnormally rigid and moved with difficulty. Saliva less fetid. Gruel enema. 12 p.m.—No change.

2nd, 9 a.m.—Bowels have not acted since yesterday. Enemas retained. Give gruel, Oss.; Beer Oss. c. Bellad. Ext. \mathfrak{z} j; in enema. 2.30 p.m.—Bowels have not acted, but there are loud intestinal rumblings. Continue treatment. 12 p.m.—Patient more excited, and throws his head about very much when touched.

3rd, 9 a.m.—Seems to have less control over his movements. Dragging straw about with his feet, and causing danger of falling by entanglement. 1 p.m.— CHCl_3 \mathfrak{z} ij in enema. About 3 minutes after administration the horse became excited, rocked from side to side, and seemed in danger

of falling. Pulse running up to 60 per minute, and becoming much softer. After about half a minute the effects had passed off. Quiet and enemas continued.

4th, 9 a.m.—Schneiderian membrane livid and petechiated, moves more freely, jaws just moveable. 1 p.m.—Jaws again firmly fixed. Limbs rigid. Repeat chloroform enema. Patient with difficulty prevented from falling. Continue nutritive enemas. Saliva less fetid. Ranula disappearing.

5th, 1 a.m.—No change, except softness and quickness of pulse increased. 9 a.m.—Jaws slightly moveable. Pulse 60 per minute, soft; respiration 72 per minute. Repeat enemas. 12 a.m.—Rolls from side to side as if in danger of falling. Enemas ejected. 10 p.m.—Has sucked up a little gruel, saliva less fetid. Enemas not retained. Respiration more free, 72 per minute; pulse 60 per minute. Extreme excitement when finger is placed in mouth.

6th, 9 a.m.—Is down. Pulse 80 per minute; respiration extremely laboured. Head and trunk in state of spasmodic rigidity. Limbs thrown wildly about when horse is disturbed. No protrusion of membrana nictitans. Jaws separable more than an inch. Enemas immediately ejected. 11 a.m.—After a hard struggle, died.

Post-mortem examination three hours after death.—Showed a general abnormal condition of the blood, as indicated by its dark-colour and ecchymosed spots on the various serous membranes and in the muscular tissues, especially of the heart, both sides of which contained blood. Lungs much congested. Some pultaceous fæces in large intestine. No facility for examination of brain and spinal cord.

N.B.—In the above case we note two important symptoms, ranula and fetid saliva, and absence of certain symptoms, as protrusion of cartilago nictitans. The effect of belladonna inunction and chloroform enema is also worthy of observation.

“SCALD-HEAD,” OR PORRIGO SCUTULATA.

By the Same.

JULY 14th, 1875.—A small toy terrier, belonging to Mr. C——, was brought to me for advice. Is in an extremely poor condition, and when running about continually “sniffles.” Has a large surface, the whole forehead, extending between

the ears, and above and between the eyes, and below the eye and ear on either side, covered with a scab, which presented a greenish-brown appearance, seeming to have been dressed with some ointment of a green colour. Gave some Pulv. Ipecac. Comp. 10 grs. daily, to endeavour to remove the "sniffles," which, however, I am inclined to attribute to the sore on the forehead.

16th.—Met Dr. T——, who examined the dog, and considered it to be suffering from "scald head," of which he had a case lately at the Barracks. Brought dog home with me. The eruption is evidently not due to traumatic cause, for on the edges of the patch are fresh eruptions; in one place a thin line of pus is oozing through the scab. Where the eruption is just breaking out the cutis is raised as by a blister. It is then soon removed by the scratching of the dog. The papillated structure of the dermis is thus exposed, and at first emits a sero-sanguineous matter; this is followed by oozing of serum, which dries up, forming a greenish powder, which I had on the 14th mistaken for ointment. A scab of about one eighth of an inch in thickness then forms. Scales rubbed off forehead.

17th.—The disease is rapidly extending backwards, downwards, and forwards between the eyes, involving the eyelids. R Ol. Jec. Ass. 20 parts; Ol. Tereb. 1 part; Amm. Fort. 1 part; mix to form a liniment. Dressed dog all over except eyes with this soap, washing her well, which pained her much. Fed principally on vegetable diet.

18th.—Slight signs of hair growing on the bald surface. Altogether looks much better, and in two or three places where the eruption was commencing it seems to have been checked. 19th.—Right eye completely closed by discharge. Remove this and dress the eyelid with ointment.

21st.—Disease does not seem to be spreading, and scabs from the places most recently affected come away readily. Dog seems improved in condition. In a short time the patient completely recovered.

I regret that I was not in a position when this case came under my notice to examine the morbid conditions microscopically, nor to experiment as to the transmissibility of the affection. I simply give the case as it occurred. In the treatment I was guided rather by convenience than by pathological reasoning. But cure of a progressing skin disease of the dog, in less than a week, in fact, by a single dressing, was very satisfactory to me.

ON PLANTS IN RELATION TO ANIMALS.

By Professor JAMES BUCKMAN, F.G.S., F.L.S., &c.

(Continued from p. 561.)

THE plants to which we shall now devote attention are those of the following genera :

1. CLEMATIS, belonging to the sub-order *Clematideæ*.
2. ANEMONE, belonging to the sub-order *Anemoniææ*.
3. HELLEBORUS, belonging to the sub-order *Helleborideæ*.

The genus *Clematis*, according to Britten and Holland, is known by the following rustic names:—"Bedwine, beggar-brushes, belly-wind, bethwine, bindwith, ballbind, climber, crocodile, devil's cut.*

The reasons for some of these names are sufficiently obvious, but others are less so.

Our only native species, the *Clematis vitalba*, derives this title from the Greek name for a plant of similar habit, κληματύς from κλημα, a tendril, and *vitis alba*, or white vine. It is well known as a climbing shrub in our hedges and thickets, especially on calcareous soils. Its finely formed leaves and scented white flowers make it a favourite, so much so, that it is called by some, virgins' bower, and as its feathered seeds ripen a white hazy mass is seen, which has caused our countrymen to call it old man's beard, while boys, who smoke the wood in the same way as they do the cane, call it honey-stick, of which, perhaps, the name it is often called by in Gloucestershire—honesty, is but a corruption.

Its liking for calcareous soils is well seen from its paucity in the middle of the London basin, where for a distance of ten miles from St. Paul's it is very seldom met with, but once get on the chalk edges of that basin, as at Maidenhead, it is abundant. On the oolites of Gloucestershire, and on the same rocks in Dorsetshire, it abounds to such an extent as to be indeed little better than a weed in the hedge-rows.

We copy the following folk-lore of the plant from Mrs. Lankester :

"Common 'Travellers' Joy, or Old Man's Beard.—The scientific name, *Clematis vitalba*, is derived from κλημα

* See 'A Dictionary of English Plant Names,' by the authors quoted. This is a most useful work, which should be in the hands of all lovers of plants.

(*klema*), a tendril, from the climbing nature of the species, and *vitis alba*, white vine. It is sometimes called virgins' bower, which name was given to it by Gerard in 1557, 'by reason of the goodly shadowe which they make with their thick bushing and climbing; as also for the beautie of the flowers, and the pleasant savour or scent of the same.' This pretty plant is one of the greatest ornaments of our country hedges, with its copious clusters of white blossoms and succeeding heaps of feather-tailed silky tufts. In some places it is used as fodder for cattle, an acrid juice, which the leaves contain whilst fresh, disappearing after drying. The branches are tough enough to make withes for faggots, for which purpose it is always used in woods where it can be procured. As a medicine, it has had some reputation internally as a remedy for dropsy, and in the form of an infusion for rheumatism. In France the irritating and vesicatory properties of its juice are sometimes turned to account by beggars, who apply it to their skin to produce ulcers and excite compassion. In the same country the twigs are used to make beehives, baskets, &c.; they probably grow stronger in a warm climate. A section of clematis wood forms a very interesting object under the microscope; the air vessels and cells are arranged in a radiate manner, allowing the air to circulate freely through them. This circumstance is turned to account by our village boys, who smoke pieces of the wood as they do of rattan cane: hence it is sometimes called smoke-wood and smoking-cane."

We learn from Sowerby's 'Useful Plants' that travellers' joy was "Formerly used by the herbalists in rheumatism and similar affections, in which they act as a rubefacient when applied for any time to the skin, producing small blisters. They were bruised before use, and were much recommended by our old writers. The stems have been employed in some parts of the country for the manufacture of baskets of a rough kind, a purpose for which their toughness well adapts them."*

The plant is still retained in some foreign pharmacopœias, especially some exotic species, which possess very acrid qualities. However, with all of them this acidity is lessened on drying, and it is stated that preserved hedge clippings with clematis are perfectly innocuous. It is so with most of the order; drying seems at once to dissipate the strong narcotic principles more or less present in all the species.

* 'The Useful Plants of Great Britain,' p. 8.

Of the anemone we have four species, two of which are undoubtedly native, and two have in all probability been introduced; they are as follows:

a. WILD

A. nemorosa—white wood anemone.

„ *pulsatilla*—pasque flower.

b DOUBTFUL NATIVES.

„ *Apennina*—blue mountain anemone.

„ *ranunculoides*—yellow anemone.

We shall describe the first two. The white wood anemone is known as one of our earliest flowers; its bright silvery-white petals, tipped with pink, occasionally nearly all purple, make quite a show in the woods, and from its innocent looking form it would little be suspected that it was in reality a highly poisonous plant, so much so that the eating of only a small portion of its foliage is enough to blister the mouth. This acidity, which belongs more or less to all the species, is said to be due to an active principle, which has been separated and named by the chemists *Anemonine*. This is best made from the root, but it is strongest in the next species.

A. pulsatilla—Pasque or Easter flower, from the time of its appearance. This plant, as it grows on the Cotteswolds, where we have often met with it and been charmed with its bright blue flowers, is a most powerful poison. The bruised leaves will soon blister the skin. Sowerby tells us that “a case is mentioned in which a man, suffering from some disorder in the leg, applied the pounded leaves to the part, but they produced violent inflammation in the calf of the limb, and eventually gangrene.”*

The roots of the *A. pulsatilla* would appear to possess most active principles, and doubtless this part of the plant yields *Anemonine* in greatest quantity.

Pulsatilla is a favourite remedy with the homœopaths, but we are not acquainted with its preparation; doubtless, however, though it is so active as that the very powder of its root causes great irritation to the operator who grinds it, yet we have no doubt its globules are as innocent as sugar plums.

The hellebore is represented by two quasi native species, viz.—

Helleborus viridis—the green.

„ *foetidus*—stinking.

and one foreign form, viz.—

H. niger—black hellebore.

* ‘Useful Plants of Great Britain,’ p. 9.

Our wild species are mostly found in calcareous districts, and they are undoubtedly very active plants, too much so, indeed, to make it safe for their use in rustic practice. Still, as decoctions of their leaves are used as applications to sores in cattle, we think, acting as poison to the different kinds of vermin by which these are too often produced, the plant is of service to the farrier, and might be used by the veterinary practitioner with advantage.

A foreign species, the *H. niger*, which is well known in our gardens under the name of the Christmas rose, is the one usually employed, and for this purpose its roots are collected in considerable quantity, being obtained from the woodland regions in the midland and southern parts of Europe, and is imported from Hamburgh and Marseilles. There is reason to think that our native species are used and sold for or with the black hellebore both at home and abroad. The only preparation made use of it in human practice is that of the tincture, and that principally in cases of dropsy, but its use is exceedingly limited.

The fact is, that in hellebore, as in so many other plants of the order, the effects are so uncertain that its use may be highly dangerous.

It is said that cattle have died from eating only a small amount of the fresh plant. It is therefore important to get rid of it in cattle runs, or to be cautious how these creatures can get access to it.

SUPPOSED LARYNGEAL DISEASE.

A CORRESPONDENT, "T. H. P.," has asked us to give insertion to the following note relating to a case of supposed laryngeal disease:

DEAR SIRS,—I have at present under my treatment a case which to me is very unusual, and I should feel obliged for your opinion, or some of your numerous readers thereon.

About three months since a client of mine gave a Cupiss ball to a four-year old gelding, which was suffering from lymphangitis. On the first attempt at giving the ball (with a balling gun) it lodged in the throat and the animal coughed it up, but the second attempt with a fresh ball was successful, the ball being swallowed without any difficulty. Since that time the horse has a bad cough, and occasionally a discharge from the nostrils, for which I have treated him. The throat has been blistered, and demulcents, &c., freely

used, and lately he has had a run at grass, but without benefit. Recently I have exhibited internally a strong solution of Zinci Chlor., fifty grains to the ounce, but with no satisfactory result. I should like to have an opinion as to the probable seat of disease, and of its true nature and treatment. I think myself that the larynx is chiefly affected, and probably with ulceration of the mucous membrane, although there are no external symptoms to confirm me in this conclusion.

Apologising for trespassing so far on your time and space,
I am, &c.

To the Editors of the Veterinarian.

MEETING OF VETERINARY SURGEONS.

SIR,—Will you kindly allow me space in your columns to inform those members of the profession who are interested in the matter that the next meeting of veterinary surgeons regarding the competitive fees of the Royal Veterinary College will be held early in October at Freemasons' Tavern, and that due notice will be given of the day and hour.

I take this opportunity of correcting an error in the report of the last meeting of the Council of the Royal College of Veterinary Surgeons, published in the current number of the *Veterinarian*. I am described as "Hon. sec. *pro tem.* of a local society." So far no "local society" has been formed. I sought permission (by request and on behalf of a large number of veterinary surgeons) to use the Council Chamber for *one* meeting, not "meetings." As a future guide it would be interesting to know on what grounds the application was refused, and why immediately afterwards a meeting was allowed on a matter extraneous to college business.

I am, sir, yours, &c.,

THOMAS MOORE.

To the Editors of the Veterinarian.

Pathological Contributions.

NEW CATTLE DISEASE.

ACCORDING to a telegram received by the *Daily News* from Bucharest, dated August 22nd, a new cattle disease has made its appearance in the marshy districts near the Danube.

THE CONTAGIOUS DISEASES (ANIMALS) ACT, 1878.

RETURN of the NUMBER of PLACES in GREAT BRITAIN upon which Contagious or Infectious Disease (except Sheep-Scab) has been reported to have existed during the Week ended August 9th, 1879, with particulars relating thereto.

PLEURO-PNEUMONIA.

| | Farms or other Places. | | | Cattle attacked. | | Diseased Cattle. | | | | Cases which existed in previous Weeks not reported until this Week. | |
|--|--|---|---|--|---------------------------|------------------|-------|------------|------------|---|------------------|
| | Number reported upon this Week which have been previously reported upon. | Number upon which Fresh Outbreaks have been reported to have taken place during the Week. | Total Number reported upon during the Week. | Remaining diseased from the previous Week. | Attacked during the Week. | Killed. | Died. | Recovered. | Remaining. | Fresh Outbreaks. | Cattle attacked. |
| ENGLAND. | | | | | | | | | | | |
| COUNTY.* | | | | | | | | | | | |
| Buckingham | 2 | 1 | 3 | ... | 3 | 2 | 1 | ... | ... | ... | ... |
| Cambridge (ex. Liberty of the Isle of Ely) | 2 | ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... |
| Cumberland | 8 | ... | 8 | ... | 1 | 1 | ... | ... | ... | ... | ... |
| Derby | 6 | ... | 6 | ... | 1 | 1 | ... | ... | ... | ... | ... |
| Essex | 12 | 1 | 13 | 1 | 3 | 3 | ... | ... | 1 | ... | ... |
| Kent (ex. Metropolis) | 1 | 1 | 2 | ... | 1 | 1 | ... | ... | ... | ... | ... |
| Lancaster | 14 | 3 | 17 | ... | 6 | 6 | ... | ... | ... | ... | ... |
| Leicester | 11 | ... | 11 | ... | 1 | 1 | ... | ... | ... | ... | ... |
| Lincoln, Parts of Lindsey | 2 | ... | 2 | 1 | 1 | 2 | ... | ... | ... | ... | ... |
| Middlesex (ex. Metropolis) | 5 | ... | 5 | ... | 1 | 1 | ... | ... | ... | ... | ... |
| Norfolk | 2 | 1 | 3 | ... | 1 | 1 | ... | ... | ... | ... | ... |
| Northampton (ex. Soke of Peterborough). | 8 | ... | 8 | ... | ... | ... | ... | ... | ... | ... | ... |
| Northumberland | ... | 1 | 1 | ... | 1 | 1 | ... | ... | ... | ... | ... |
| Notts | 4 | ... | 4 | ... | 2 | 2 | ... | ... | ... | ... | ... |

| County. | 1871. | 1881. | 1891. | 1901. | 1911. | 1921. | 1931. | 1941. | 1951. | 1961. | 1971. | 1981. | 1991. | 2001. |
|------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Salop | 2 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Stafford | 3 | 1 | 4 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| Suffolk | 7 | ... | 7 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Surrey (ex. Metropolis) | 1 | ... | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Worcester | ... | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| York, North Riding . | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| " West Riding . . . | 14 | 2 | 16 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| Liberty of the Isle of Ely . | 2 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| The Metropolis . . . | 5 | 3 | 8 | 4 | 10 | 14 | ... | ... | ... | ... | ... | ... | ... | 5 |
| SCOTLAND. | | | | | | | | | | | | | | |
| COUNTY.* | | | | | | | | | | | | | | |
| Aberdeen | 14 | 1 | 15 | 5 | 7 | 11 | ... | ... | 1 | 1 | 1 | 1 | 1 | 1 |
| Edinburgh | 3 | ... | 3 | ... | 2 | 2 | ... | ... | ... | ... | ... | ... | ... | ... |
| Fife | 5 | 2 | 7 | ... | 3 | 3 | ... | ... | ... | ... | ... | ... | ... | ... |
| Forfar | 1 | ... | 1 | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Kinross | 4 | ... | 4 | 2 | 2 | 4 | ... | ... | ... | ... | ... | ... | ... | 2 |
| Lanark | 1 | 1 | 2 | ... | 20 | 20 | ... | ... | ... | ... | ... | ... | ... | ... |
| Perth | 2 | ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Renfrew | 2 | 1 | 3 | ... | 2 | 2 | ... | ... | ... | ... | ... | ... | ... | ... |
| Stirling | ... | 1 | 1 | ... | 1 | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| TOTAL | 144 | 24 | 168 | 16 | 88 | 101 | 1 | ... | 2 | 6 | 10 | ... | ... | ... |

FOOT-AND-MOUTH DISEASE.

| | Farms or other Places. | | | Animals attacked. | | Diseased Animals. | | | | Cases which existed in previous Weeks not reported until this Week. | |
|---|--|---|---|--|---------------------------|-------------------|-------|------------|------------|---|-------------------|
| | Number reported upon this Week which have been previously reported upon. | Number upon which Fresh Outbreaks have been reported to have taken place during the Week. | Total Number reported upon during the Week. | Remaining diseased from the previous Week. | Attacked during the Week. | Killed. | Died. | Recovered. | Remaining. | Fresh Outbreaks. | Animals attacked. |
| ENGLAND. | | | | | | | | | | | |
| COUNTY.* | | | | | | | | | | | |
| Berks | 4 | ... | 4 | 960 | ... | ... | 28 | 610 | 322 | ... | ... |
| Cambridge (ex. Liberty of the Isle of Ely). | 20 | 5 | 25 | 2290 | 682 | ... | ... | 200 | 2772 | 2 | 550 |
| Devon | ... | 1 | 1 | ... | 13 | ... | ... | ... | 13 | ... | ... |
| Dorset | 1 | 8 | 9 | 80 | 230 | ... | ... | 16 | 294 | ... | ... |
| Hants | 3 | ... | 3 | 1664 | 170 | ... | 4 | 200 | 1630 | ... | ... |
| Oxford | 1 | 3 | 4 | 210 | 343 | ... | 1 | 210 | 342 | ... | ... |
| Salop | 1 | ... | 1 | 1 | ... | ... | ... | ... | 1 | ... | ... |
| Wilts | 3 | ... | 3 | 249 | ... | ... | ... | 20 | 229 | ... | ... |
| TOTAL | 33 | 17 | 50 | 5454 | 1438 | ... | 33 | 1256 | 5603 | 2 | 550 |

GLANDERS.

| ENGLAND. COUNTY.* | | | | Horses attacked. | | Diseased Horses. | | | | Horses attacked. | Horses attacked. |
|--------------------------------------|-----|-----|-----|------------------|-----|------------------|-----|-----|-----|------------------|------------------|
| | | | | | | | | | | | |
| Essex | ... | 1 | ... | 1 | ... | 1 | ... | ... | ... | ... | ... |
| Hertford | ... | 1 | ... | 2 | ... | 2 | ... | ... | ... | ... | ... |
| Kent (ex. Metropolis | ... | 1 | ... | 1 | ... | 1 | ... | ... | ... | ... | ... |
| Leicester | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Middlesex (ex. Metropolis) | 1 | 1 | ... | 1 | ... | 1 | ... | ... | ... | ... | ... |
| Warwick | 1 | ... | 1 | ... | ... | 1 | ... | ... | ... | 1 | 1 |
| The Metropolis | 4 | 9 | 13 | 14 | 15 | ... | ... | ... | ... | 1 | 1 |
| TOTAL | 7 | 13 | 20 | 19 | 21 | ... | ... | ... | ... | 2 | 2 |

FARCY.

| ENGLAND. COUNTY.* | | | | | | | | | | | |
|-----------------------------|---|-----|---|-----|-----|-----|-----|-----|-----|-----|-----|
| | | | | | | | | | | | |
| York, West Riding | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| The Metropolis | 6 | 1 | 7 | 8 | 8 | ... | 1 | 3 | ... | ... | ... |
| TOTAL | 7 | 1 | 8 | 8 | 8 | ... | 1 | 3 | ... | ... | ... |

SWINE FEVER.

| | Farms or other Places. | | | Swine attacked. | | Diseased Swine. | | | | Cases which existed in previous Weeks not reported until this Week. | |
|---|--|---|---|--|---------------------------|-----------------|-------|------------|------------|---|-----------------|
| | Number reported upon this Week which have been previously reported upon. | Number upon which Fresh Outbreaks have been reported to have taken place during the Week. | Total Number reported upon during the Week. | Remaining diseased from the previous Week. | Attacked during the Week. | Killed. | Died. | Recovered. | Remaining. | Fresh Outbreaks. | Swine attacked. |
| <hr/> | | | | | | | | | | | |
| ENGLAND. | | | | | | | | | | | |
| COUNTY.* | | | | | | | | | | | |
| Bedford | 1 | 1 | 2 | ... | 2 | 2 | 10 | ... | ... | ... | ... |
| Berks | 1 | 1 | 2 | ... | 23 | 13 | 3 | ... | ... | ... | ... |
| Buckingham | 1 | 2 | 3 | ... | 7 | 4 | ... | ... | ... | ... | ... |
| Cambridge (ex Liberty of the Isle of Ely) | 1 | 1 | 2 | ... | 7 | ... | ... | ... | 7 | ... | ... |
| Chester | 1 | 1 | 2 | 5 | 7 | 10 | 2 | ... | ... | ... | ... |
| Derby | 5 | 3 | 8 | 1 | 5 | 4 | 2 | ... | ... | ... | ... |
| Devon | ... | 1 | 1 | ... | 6 | 6 | ... | ... | ... | ... | ... |
| Dorset | 4 | 2 | 6 | 9 | 8 | 10 | 2 | ... | 5 | 1 | 10 |
| Essex | 1 | 2 | 3 | ... | 44 | 35 | 9 | ... | ... | 1 | ... |
| Gloucester | 2 | 2 | 4 | 1 | 8 | 6 | 3 | ... | ... | 1 | 2 |
| Hants | ... | 1 | 1 | ... | 1 | ... | 1 | ... | ... | ... | ... |
| Hertford | ... | 1 | 1 | ... | 36 | 24 | 12 | ... | ... | ... | ... |
| Huntingdon | 2 | ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... |
| Lancaster | 9 | 6 | 15 | 3 | 15 | 17 | 1 | ... | ... | 1 | 2 |

| | | | | | | | | | | | | | | | | |
|----------------------------|---|---|---|-----------|-----------|------------|-----------|------------|------------|-----------|------------|-----------|-----------|------------|-----|-----|
| Leicester | . | . | . | 1 | 2 | 3 | ... | 5 | 3 | 2 | 2 | ... | ... | ... | ... | ... |
| Middlesex (ex. Metropolis) | . | . | . | 1 | ... | 1 | ... | 2 | 2 | 2 | ... | ... | ... | ... | ... | ... |
| Monmouth | . | . | . | 4 | 1 | 5 | 9 | 2 | 4 | 4 | 7 | ... | ... | ... | ... | ... |
| Norfolk | . | . | . | 5 | 3 | 8 | 4 | 29 | 30 | 3 | 3 | ... | ... | ... | ... | ... |
| Notts | . | . | . | 2 | 2 | 4 | ... | 4 | 4 | ... | ... | ... | ... | ... | ... | ... |
| Salop | . | . | . | 1 | 2 | 3 | ... | 20 | ... | 1 | ... | ... | ... | ... | ... | ... |
| Somerset | . | . | . | 5 | 5 | 10 | 23 | 55 | 56 | 18 | ... | ... | ... | ... | ... | ... |
| Stafford | . | . | . | ... | 3 | 3 | ... | 6 | 4 | 2 | ... | ... | ... | ... | ... | ... |
| Suffolk | . | . | . | 5 | 1 | 6 | 7 | 30 | 37 | ... | ... | ... | ... | ... | ... | ... |
| Wilts | . | . | . | 1 | 1 | 2 | 3 | 4 | 3 | 4 | ... | ... | ... | ... | ... | ... |
| York, East Riding | . | . | . | ... | 1 | 1 | ... | 1 | ... | 1 | ... | ... | ... | ... | ... | ... |
| " North Riding | . | . | . | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| " West Riding | . | . | . | 1 | 10 | 11 | ... | 13 | 12 | 1 | ... | ... | ... | ... | ... | ... |
| WALES. | | | | | | | | | | | | | | | | |
| COUNTY.* | | | | | | | | | | | | | | | | |
| Brecon | . | . | . | ... | 1 | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Flint | . | . | . | 1 | ... | 1 | 2 | ... | 1 | 1 | ... | ... | ... | ... | ... | ... |
| Glamorgan | . | . | . | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| TOTAL | . | . | . | 55 | 56 | 111 | 67 | 341 | 287 | 85 | ... | 36 | 23 | 141 | | |

* Counties include such Boroughs and Burghs as are locally situated within the limits of the Counties, or, if surrounded by two or more Counties, then they are included in the County with which they have the longest common boundary. Berwick-upon-Tweed is included in Northumberland.

Veterinary Department, Privy Council Office, 19th August, 1879.

CATTLE PLAGUE.

THIS disease continues to prevail to a considerable extent in the provinces of Bessarabia, Ekaterinoslav, Taurida, Kherson, Volhynia, and Podolia in the Russian Empire.

The cattle plague has again appeared in the Austrian Dominions in Moravia among cattle brought from Galicia; measures were, however, taken to prevent the spreading of the disease, and on the 11th of August Galicia and Hungary were reported free from cattle plague.

The malady is also reported to exist in Kenneh and in the district of Luxor in Egypt.

FOOT-AND-MOUTH DISEASE.

DURING the past two months a considerable increase has taken place in the number of outbreaks of this disease in England. Eight counties are now returned infected, and the disease has spread to such an extent in the County of Cambridge that the Privy Council have put in force the powers conferred upon them by the recent Act of Parliament, and have passed an order declaring an infected area extending over nearly a third of that county.

The *Mark Lane Express* of August 18th says that—"In consequence of the prevalence of the foot-and-mouth disease in the neighbourhood of Newmarket, the usual market was not held in that town last week."

We learn that Mr. Duguid, Inspector of the Privy Council, Veterinary Department, has been sent into the Stratton and Wimborne police division of Dorset to make a report on the outbreak of foot-and-mouth disease, with the view of relaxing certain restrictions of a stringent character made by the magistrates.

SIBERIAN CATTLE DISEASE.

ON the eve of going to press with our last number, a telegram was received to the effect that the Siberian plague had appeared amongst animals in the district of Nova-Ladoga, in the Government of St. Petersburg, and that the Prefect of the Capital had issued instructions to the house-watchmen to notify all cases of doubtful illness amongst domestic animals, and had at the same time ordered increased police and veterinary supervision.

The official report respecting cattle diseases in Russia during 1877 gives an idea of the extent of the malady in that year. The statistics show that 212,768 head of cattle and 23,630 horses died of the cattle disease or Siberian plague in the forty governments of Russia during last twelve months.

Facts and Observations.

SHEEP SCAB.—A cattle dealer, John Fitzgerald, has been fined £5 and costs for exposing sheep affected with scab in the Bristol market.

THE "GREAT EASTERN" AND AMERICAN IMPORTATIONS.—It is stated that the steamer "Great Eastern," which has long been lying at Milford Haven, is to be fitted up with new boilers and machinery at a cost of £100,000, as a cattle ship. It is estimated that she can carry 2200 head of cattle and 36,000 sheep. She is to trade between London and Texas.

COMPOSITION OF MARE'S MILK. By M. Schrodtt (*Landw. Versuchs-Stat.* 23, 311—316).—The author analysed the milk of a five years old mare, ten weeks after foaling, with the following results:

| | | | | |
|---------------|-----------|------|-----------|----------|
| Dry substance | . . . | 8.85 | per cent. | |
| Ash | | 0.37 | " | } = 8.89 |
| Fat | | 1.27 | " | |
| Albuminoids | | 1.50 | " | |
| Milk sugar | | 5.75 | " | |

The fresh milk was perfectly neutral.—*Journal of the Chemical Society.*

PRUSSIAN LIVE-STOCK STATISTICS.—The *Mark Lane Express*, quoting these statistics, says it appears that during the official year 1877-78, 70 horses, 1903 beasts, 1327 sheep, and 202 swine died of anthrax; 18,589 beasts, 2435 sheep, and 2047 swine of foot-and-mouth disease; 1980 beasts of lung disease; 2848 horses of glanders; 3888 sheep of sheep-pox; and 1309 sheep of rot. Within the same period 571 dogs, 6 horses, 132 beasts, 38 sheep, and 16 swine were put under control as suspected of rabies; 137 dogs were killed as unowned and 1089 as rabid.

SINGULAR METHOD OF STIMULATING THE VEGETATION OF SEEDS WHICH GERMINATE WITH DIFFICULTY.—Weak solutions of caustic potassa or soda are exceedingly efficacious, according to Boettger. If a handful of coffee-beans are agitated for a few hours with a weak solution of potash-lye germination begins after two or three hours.—*Chemical News.*

THE VETERINARIAN, SEPTEMBER 1, 1879.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

THE NEW ORDER OF COUNCIL RELATING TO "SWINE FEVER."

A FEW months ago the disease among swine, which is generally known in this country as "typhoid fever" or "pig typhoid," was made the subject of an Order of Council, which provided for the slaughter of diseased animals only. In a short time, whether in consequence of an increase in the prevalence of the disease or of the discovery that the legislative means of dealing with it were insufficient, it is difficult to determine, local authorities in those parts of the country which were most infested complained that the slaughter of the diseased animals did not meet the difficulties of the case. The County of Somerset took a prominent part in the discussion, which was carried on for some time in the agricultural press.

The recent "Swine Fever Orders" may be taken to be the outcome of the recommendation of the several authorities on the subject, and, as usual in this country, where acts and orders are administered by local, and not by central executives, powers are conferred which may be acted up to or not, as the circumstances of the district may seem to require, while certain other powers must be exercised.

Thus the local authority, on receiving the report of the existence of swine fever, must inquire into the correctness of the report and determine whether or not the place is to continue to be an "infected place," which it necessarily becomes as soon as the inspector declares the existence of disease, correctly or not. The local authority must also cause the slaughter of all diseased swine, and may cause the slaughter of all those which have been in contact with the diseased animals; and for this purpose they may authorise their removal to a slaughter-house.

An important feature of the Supplemental Order is the application of the provision of the Diseased Animals in Transit Order to Swine Fever, to meet the difficulty which would occur if a market, or railway station, or slaughter-house, were to be declared an infected place in consequence of the disease being detected at any one of these places. In fact, before the Supplemental Order was passed, a local authority did declare a certain railway truck in which a diseased pig was found an "infected place."

Altogether the measures for the stamping out of swine fever are sufficiently stringent for the purpose if properly applied by the local authorities and, we add, by the members of our profession. Swine fever is not a new disease, but we have reason to believe that some veterinary surgeons who fill the responsible office of advisers to the local authorities have not made themselves familiar with the characters of the disease. More than once well-defined specimens of the morbid parts of swine affected with swine fever have been forwarded for our inspection, with the statement that the veterinary inspector had declared that the disease was not swine fever. As every local authority is bound by law to obtain the assistance of a veterinary inspector when inquiring into the correctness of a report, it is of some importance that the person who fills the office should take a little trouble to investigate the disease if he is not already familiar with its characteristic appearances.

POISONING BY SAUSAGES.

IN the last issue of the *Veterinarian* a case of poisoning of several persons by sausages, which had been purchased at a stall in the market at Thaxted, was recorded, and it was stated that the Local Authority had ordered an analysis of the sausage meat to be made by the medical officer of health. We have since received a local paper, *The Braintree and Bocking Advertiser*, in which we find a full report of the examination and of the conclusions arrived at by the medical officer. We have read many reports of the exam-

ination of diseased meat, but never remember to have seen one to be compared to this. The statement of the case being one of trichinosis, will, we think, be regarded not only by our profession, but by the entire medical profession, as being at least very remarkable. For the first time also we learn of trichinæ having produced effects of an irritant poison, and that almost immediately in forty-four persons who had partaken of the sausages out of fifty-two.

Besides this startling declaration, we cannot refrain from noticing another, in which Mr. Watson and Mr. Sunderland are extolled for the success attending their treatment, because it was directed to killing the worms and preventing their entering the system.

The report is as follows :

THAXTED.

The Cases of Poisoning by Sausages.

Dr. Armistead, the Medical Officer of Health for the Dunmow Rural Sanitary Authority, has just reported to that authority upon the recent outbreak of trichinosis at Thaxted :

“ He stated that he had examined fifty-two persons who had eaten some sausages, purchased at eightpence per pound, from a man who had a stall in the street, on June 14th, and of these forty-four showed symptoms of irritant poisoning ; three others were slightly ill ; and only five escaped without any ill effects. The symptoms varied a little, but there was generally diarrhœa, which in some cases was very severe, vomiting, thickly-coated tongue, pain in the stomach, back, and in the muscles, sometimes extending to the ends of the fingers, pain in the head, and in some cases double vision and swelling of the eyes. There followed more or less fever, with perspirations, thirst, and loss of appetite. In four of the cases vomiting and diarrhœa with pain began within twelve hours after eating the sausages. In one case sixteen hours elapsed. In twenty cases the symptoms were very violent at about the twenty-fourth hour. In four cases there were no symptoms for thirty-six hours, and in nine cases for sixty hours. In one case three days elapsed, in five cases six days, and in three cases the symptoms were so slight that no notice was taken of their commencement. This variation may be accounted for in several ways. Age seems to have

some effect, for children were much less severely attacked than adults, which is contrary to what might have been expected. The trichinæ are very minute round worms coiled up in cells, which pass through their first stage of development in the pig, but do not arrive at maturity until the pork containing them has been eaten by a human being. Thorough cooking will kill them, but when the pork is eaten undercooked they often cause death. The cooking of the sausages probably had some effect in preventing the Thaxted cases ending fatally, but no little credit is due to the treatment pursued by Mr. Watson and Mr. Sunderland, which was directed to killing the worms and preventing them entering the system. In former outbreaks reported the results varied greatly. In some the patients all recovered in about a month, and in others fifty per cent. died, and others continued ill for about three or four months. The severity appears to depend first on the number of trichinæ swallowed alive, and secondly on whether they remain long enough to deposit their eggs, which they can do at the enormous rate of from 300 to 500 at a time. The diseased bits in the sausages had evidently been salted, and the sausage maker has, on further inquiry, acknowledged that the pork was not all fresh, but some had been in pickle, and was of two or more kinds. If, as is probable, the salted diseased pork was foreign, the outbreak could be easily accounted for. Trichinæ have been frequently found in pork sent from America, and a question was asked about it by the Earl of Belmore, in the House of Lords, on May 29th last, to which the Duke of Richmond replied that he had caused an examination to be made by officers of the Veterinary Department of swine which had been landed at Liverpool, and he regretted to say that trichinosis was discovered in some animals, but that the swine coming from abroad were slaughtered at the port of landing. He further stated that the question enabled him to caution the public, and to say that the best way of preventing the spread of this disease, so dire in its results to the human species, was by thorough cooking of hams, bacon, and all forms of meat of the pig. The German trichinosis statistics which were published for 1876 showed one case in every 2000 pigs examined. The statistics for 1877 showed one case in every 2800 examined; 343 of the cases in 1877 were discovered in American pork and bacon imported into Germany. Although the pork known to be diseased would not be eaten, there were 138 known cases of trichinosis among human beings reported to have occurred in that year. The Government of Portugal have, it is reported, issued a

decree prohibiting the importation into Portugal of pork from the United States in every shape in consequence of trichinosis."

In consequence of the report of their Medical Officer of Health, the Dunmow Rural Sanitary Authority have issued a placard warning the public and cautioning sellers of pork.

Extracts from British and Foreign Journals.

DEVELOPMENT OF THE OLFACTORY NERVE AND OLFACTORY ORGAN OF VERTEBRATES.

THE *Edinburgh Medical Journal* says that in the course of an investigation by Dr. Milnes Marshall into the development of the cranial nerves of the chick, certain facts came to light indicating that the olfactory nerve, instead of being, as usually described, a structure differing totally in its mode of origin from all the other nerves in the body, in reality "exactly corresponds in mode of development with the other cranial nerves, and with the posterior roots of the spinal nerves." * The present paper contains the results of further investigations on this point; it deals also with some features in the development of the vertebrate olfactory organ, and with certain questions of a more general nature affected by the conclusions arrived at.

The Development of the Olfactory Nerve.—The olfactory nerve of an adult vertebrate is usually described as consisting of three parts; a proximal *tractus olfactorius*, an intermediate *bulbus olfactorius*, and a distal *nervus olfactorius*, connecting the bulb with the olfactory organ. Of these parts the two former are commonly said to arise as a hollow diverticulum of the cerebral hemisphere—the so-called olfactory vesicle or olfactory lobe. The third part, the *nervus olfactorius*, is described as arising at a later stage, either from the olfactory lobe, from the olfactory organ, or from the intervening mesoblast. In consequence of these peculiarities in its mode of development, the olfactory nerve is said not to bear the slightest resemblance to the other cranial nerves, and to be in no way comparable with them. Dr. Marshall, however, finds from an examination of a large number of vertebrate embryos—chick, dog-fish,

* *Proc. Roy. Soc.*, 8th March, 1877, p. 50, and *Quarterly Journ. of Micros. Science*, January, 1878, pp. 17—23.

salmon, trout, axolotl, frog, and lizard—that the *nervus olfactorius* is the first part to be developed; that it arises at the same time as the other cranial nerves, and in the same manner; that it appears before the cerebral hemispheres, and consequently arises from the original fore-brain. He finds, further, that there is no trace whatever of an olfactory vesicle in the chick till the end of the seventh day, or in the dog-fish till stage O of Balfour's nomenclature; in the salmon and trout there is no trace of an olfactory vesicle up to the time of hatching, nor, indeed, for some time afterwards.

Dr. Marshall maintains that the olfactory vesicle must, therefore, be regarded as a structure of merely secondary importance; and that the olfactory nerves, since in their early stage they do not differ embryologically in any respect from the segmental cranial nerves, must be regarded as the first or most anterior pair of true segmental nerves.

DEVELOPMENT AND METAMORPHOSES OF TÆNIÆ.

THIRTY years ago Van Beneden, Siebold, Leuckart, and Küchenmeister established, by experiments on carnivorous animals, not only that the vesicular worms were imperfect forms of Tæniæ, but that it was indispensable that the worms should be swallowed by an animal to bring them to the perfect state.

This view, while explaining the origin of the armed Tæniæ of carnivorous and some omnivorous animals, did not, however, explain that of the unarmed Tæniæ of herbivorous animals. The horse, ox, sheep, &c., often have adult Tæniæ, and yet they do not swallow any organism capable of harbouring the scolecides of their Tæniæ.

M. P. Mégnin thinks* he has discovered the key to the enigma from an examination he made of some horses and rabbits. In these animals, the *Echinococci* and *Cysticerci*, when they develop in the adventitious cavities in immediate communication with the interior of the intestine (cavities resulting from the enlargement of follicles or glandules into which the hexacanthian embryos have introduced themselves), or even when they become free in the peritoneal cavity of the wild rabbit, continue their metamorphoses on the spot, and arrive at the adult state without quitting the organism into which they penetrated as a microscopic egg ($\cdot 03$ to $\cdot 07$ mm. in diameter) either with the food or drink of

* 'Comptes Rendus,' vol. lxxxviii (1879), p. 88.

the animals. In this case, however, they give rise to an unarmed *Tænia*, whilst the same worm, if swallowed by a carnivorous or omnivorous animal, would become in its intestines an armed *Tænia*, that is, provided with the hooks of the scolex from which it originates, and which in the former cases it loses.

Some unarmed and armed *Tæniæ* are therefore two adult and parallel forms of the same worm, and the differences, often very great, which they present (as in the *Tænia perfoliata* of the horse and the *T. echinococcus* or *T. nana* of the dog which originate from the same worm), are due exclusively to the difference of the habitations in which their final metamorphoses are accomplished.—*Journ. Roy. Mic. Soc.*

ANIMAL VACCINATION.

DR. CAMERON has introduced a Bill into the House of Commons with a view of obviating the objection which some people have to vaccination, on the ground that, if the lymph has been obtained from an unhealthy child, some maladies may unintentionally be communicated along with the cow-pock. The Bill imposes on public vaccinators the duty of vaccinating a child with animal lymph whenever its parent or the person having charge of it requires them to do so. The Local Government Board is directed to take such measures as may from time to time be necessary to secure for the public use a supply of animal lymph, and to provide for its distribution to public vaccinators and medical practitioners, the cost of such measures being defrayed out of moneys provided by Parliament. A maximum penalty of three months' imprisonment, or of a fifty pound fine, is imposed on those who knowingly supply or use as an animal lymph for vaccination anything that is not so. "Animal lymph" is defined as being vaccine lymph, either fresh or preserved, obtained directly from cow-pock vesicles upon a calf or heifer, and derived by propagation through a series of calves or heifers from virus obtained from a case of natural cow-pock. The Bill has been withdrawn from lack of time, but the subject will require to be dealt with.—*Sanitary Record.*

CRUELTY TO A HORSE BY OVER-WORK.

THE *Globe* of August 21st, alluding to a case of cruelty to a horse by being worked by a flyman, although affected with severe lameness arising from long existing and incurable disease, says :

“The Society for the Prevention of Cruelty to Animals is placed in an awkward predicament if a recent decision of the magistrate at Hammersmith Police Court, as reported in the newspapers, is to be taken as sound law. A flyman, of Wimbledon, was charged by the society’s officers with driving in a waggonette a horse that was incurably lame and in pain. According to three veterinary surgeons, who were called as witnesses, the poor creature was not fit to live, and they declared it would be a mercy to have it killed. With his customary caution the magistrate left the court to satisfy himself as to the merits of the charge by personal inspection. On his return he remarked that the horse had a ‘cheerful countenance,’ which to his—the worthy magistrate’s—mind indicated that it was not in pain. Indeed, his worship was so impressed by the quadruped’s happy mien that he questioned one of the veterinary witnesses as to whether, if he were in the horse’s place, he would like to be killed. The skilled witness, however, who probably had not considered the case from this point of view, declined to give an opinion. Then the magistrate proceeded to pronounce judgment. He said, ‘It would be cruelty if a horse were worked at a time when it was known that it was unfit to be worked ; but it would not be cruelty if worked in an unsound state, supposing that everything had been done for it, and that it was clear it must be killed if not worked. Otherwise it would be cruelty to work unsound horses which went about cheerful and happy.’ From which it would appear that a man who owns a horse fit only for killing may continue to work it so long as he can show that he has done all that he can to alleviate its pains. Again, as regards the ‘cheerful countenance,’ a horse has only, in vulgar parlance, to grin and bear his infirmities—to put a contented face on things as he finds them—and it may defy the society and all its officers. Then, again, when may a horse be said to wear a cheerful countenance ? And should it form a branch of the veterinary surgeon’s education to study equine physiognomy in order to qualify himself to judge by an index to which the magistrate in question attached such importance ? Anyhow, since his worship in the case in question thought fit to dismiss the summons and condemn the prosecution to the payment of a guinea costs, the society’s officers will, no

doubt, be cautious in their arrests of ill-users of horses in the Hammersmith district.

INOCULABILITY OF *TINEA TONSURANS* ON THE LOWER ANIMALS.

DR. SHOEMAKER, in an account of an outbreak of ringworm among the children at a public institution in Philadelphia, gives a description of the effect of the application of scales from diseased patches to the bodies of cats. For three days he was not able to detect any change on the parts on which the scales were placed, but on the beginning of the fourth, a small meal-like spot was observed upon one, and on another the hairs began to fall out. By the fifth day the patches had attained the characteristic circular form, and the affection continued to spread rapidly, until spots the size of a large coin were almost denuded of hair. Scales from the patches of one of the cats were re-inoculated on a healthy portion of the scalp of one of the children, and thigh of another, with the effect of reproducing ringworm. A section of the skin of one of the cats was also made and examined microscopically. The parasite was observed among the scales of the horny layer of the epidermis, in the cutis on the hair shaft, while small abscesses were also to be seen in the rete mucosum and in the hair follicles. The parasite could not, however, be detected in the subcutaneous cellular tissue.—*Edinburgh Medical Journal*.

THEORY OF THE ACTION OF BACTERIA IN ANTHRAX.

M. TOUSSAINT has recently called attention, in the *Comptes Rendus*, to the theory of the action of bacteria in Anthrax. In applying the data furnished by the experiments communicated to the Academy to the comparative study of the lesions which I have observed in different species of animals, I consider that it is possible to deduce from them a general theory of the action of bacteria introduced into an organism. The following is a summary of the theory :

Anthrax is due to the existence of a parasite which lives and is reproduced in the blood and fluids of living animals, which acts through its physical qualities, and through the substances which it secretes or exudes, or the formation of which it provokes ; these substances are soluble, and possess inflammatory properties more or less intense according to the animals which nourish the bacteria. The difference in activity

of the phlogogenic matter has not yet been explained: it is possible that it depends on the peculiar properties of the blood of the animals in which the parasites are developed, but some experiments, unpublished as yet, lead me to think that they may be owing to polymorphism.

When the bacteria produce a matter which is only slightly inflammatory, they act more especially by their physical properties, and cause death by the obliteration of the capillary vessels of the essential organs; such is the case with the rabbit, the sheep, and the guinea-pig, where these lesions are almost exclusively met with. To the more intense phlogogenic properties correspond vascular lesions of another order; the rupture of the capillary vessels and effusions of blood more or less considerable which exist simultaneously with the vascular obliterations, as is seen sometimes in sheep, and always in the horse and the ass. Lastly, the inflammatory properties may predominate, and death take place, when the number of the bacteria is relatively inconsiderable; the vascular ruptures then become of extreme importance; they are found especially in the walls of the heart of the dog.

It now remains, in order to complete this theory, to examine and explain the lesions of the lymphatic system. The following are the facts which have been derived from my experiments:

Three cases are possible:

1. The Anthrax was transmitted by *inoculation* to an animal which died without showing vascular ruptures.
2. The Anthrax was transmitted to the animal by *injection* direct into a vessel.
3. The Anthrax was transmitted either by inoculation or by intravascular injection to an animal which in the course of the malady showed more or less numerous vascular ruptures.

In the first case researches made on the fresh or hardened ganglia and by means of sections, showed no bacteria except in those situated in the course of the lymphatics, proceeding from the inoculated spot, where they were found in immense numbers.

In the second case no ganglion showed the presence of bacteria in the sinus; the only ones met with were contained in the blood-vessels of the follicles.

In the third case all the ganglia situated in the course of the lymphatics, proceeding from the points where the vascular ruptures existed, were gorged with bacteria; the infiltrations in the neighbourhood of the rupture showed heaps of them, formed of long entangled filaments, and the ganglia had a

quantity of them in their sinus, which augmented with the age of the rupture.

These three cases are easily interpreted; they are reducible, in fact, to one. The mode of action of the bacteria is always the same. Take the first (that of inoculation) as a typical case.

When an animal has been inoculated, from that moment until its death it constantly shows the presence of bacteria in one or other parts of its economy—not latent bacteria in the state of the germ, but entire and articulated, and visible to the microscope. They are always found in the connective tissue adjacent to the inoculated spot, and their number is greater in proportion as the period of inoculation is distant from that of observation. The infiltration or œdema which they provoke is propagated in the direction of the lymphatics which collect and convey them to the ganglion. They penetrate this organ, as do all finely pulverised solid substances, as red-lead injected under the skin and tattoo powders; I have found them in considerable numbers (about ten in the field of the microscope), five hours after an inoculation has been made, at two centimètres distance from an axillary ganglion, in the pulp of this ganglion. Once in a ganglion they multiply, produce inflammation, and a more ready discharge of the substances inclosed in the lymphatic sinus; their multiplication by elongation is also a mode of progression; they finally issue forth through the efferent vessels and reach the following ganglion, or rather the blood-vessels, where they multiply rapidly and where they remain.

From the instant that the bacteria penetrate into the blood (by taking the blood of a rabbit inoculated $7\frac{1}{2}$ hours previously from three punctures made in the inside surface of each fore-leg, and injecting fifteen drops of it in the jugular of another rabbit, I caused the death of the latter) the phenomena are as though the injection had been made in the vessels, that is, as in the second case, allowance being made for the parasites constantly supplied by the ganglia which were the first receptacles.

Finally, in the case in which vascular ruptures supervene after the penetration of the bacteria into the blood, each rupture lets a greater or less number of bacteria escape, which there act as true, deep inoculations, which are followed by the same disorders as in subcutaneous inoculation, that is to say, infiltration, penetration into the ganglia, and return to the blood. But the disorders in this case are so numerous and severe that the animal dies before the capillary emboli are formed.

The knowledge of these facts may throw some light on the mode in which the bacteria penetrate in the case of spontaneous Anthrax; it enables us to determine in what part of the economy and through what channel the parasites are introduced.—*Journ. of the Roy. Mic. Soc.*

FILARIA IN THE EYE.

BY CHAS. S. TURNBULL, M.D., Ph.D. A paper read before the Alumni Society of the Auxiliary Department of the University of Pennsylvania, at its Stated Meeting, Sept. 27th, 1878.

Filaria in the Eye of the Horse.

HEARING, through the kindness of a friend, that there was on exhibition, at a stable on Sansom Street, a horse with a living worm in his eye, I at once made search for the curiosity. After finding and making a critical examination of the case, I was convinced that it was one of more than usual interest. At my desire Prof. Joseph Leidy visited the animal with me, and as he had never seen such a case before, he expressed himself emphatically concerning its novelty and interesting nature.

As all physicians are more or less interested in horses, I have described the case mentioned, as well as two others, both of which occurred in this country, have visited some of our most prominent veterinary surgeons, and consulted the best authorities on helminthology and hippophysiology, so as to be able to present a reliable and succinct account of the disease in question.

A heavily built dun horse, twelve years of age, which had been raised and worked upon a farm near Rochester, N. Y., was led out to the light, and through the partially opaque cornea of his left eye could be seen a worm, several inches in length. It was white in colour, and without the aid of any artificial means could be distinctly seen floating, wriggling, and twisting about in the anterior chamber. The eye seemed very much irritated, as the horse continually endeavoured to rub it, and the stimulus of light caused profuse lachrymation, and what is characteristic in such cases, *at times only*, was the cornea hazy, and the aqueous humour cloudy. The horse appeared perfectly healthy, was in excellent condition, and did not seem to be particularly annoyed by the presence of his unusual guest. The iris was of a good colour, the action of the pupil perfect, lens clear, and remainder of the eye free from irritation.

The horse had been turned out early last spring (which will be remembered as an unusually wet one), and about that time the worm, which was one inch in length, was first discovered. Since then it has grown several inches, and at the time of this writing looks like a piece of catgut from four to five inches in length. On account of its incessant motion no details concerning the parasite's exact shape could be made out. As the present owner bought the horse for his eye, no one will be likely to have that satisfaction.

This case makes the *third*, which so far as I can ascertain, has occurred in this country. The *first* on record was exhibited in this city in the latter part of the last century, and was reported by the late Judge Francis Hopkinson, in a paper read before the Philosophical Society, September 26th, 1783*. He says: "This worm was of a clear white colour, in size and appearance much like a piece of white bobbin. It seemed to be from two and a half to three inches in length. The creature was in constant lively vermicular motion, sometimes retiring so deeply into the eye as not to be seen at all. I could not distinguish its head, neither end being perfectly exhibited while I viewed it; and, indeed, its motion was so brisk and constant as not to admit of so nice an examination. The horse's eye was exceedingly inflamed, swollen, and running, so that it was with difficulty the eye could be kept open for more than a few seconds at a time, and I was obliged to watch favorable moments for a distinct view of the tormentor. I believe (the judge goes on to say) the horse was quite blind in that eye, for it appeared as if all the humours were confounded together, and that the worm had the whole orb to range in."

This worm, I think, must also have been in the anterior chamber, for if the eye had been in the disorganised condition represented by the judge, the parasite could not have been seen at all.

The *second* case, which was never reported, occurred in the practice of Dr. Th. N. Corbyn, Ph.D., V.S., of this city, who kindly gave me the following interesting account of it. "I have had but one case in an experience extending over fifty years, and this occurred in the year 1833. The horse, the property of a physician in Alleghany City, Pa., had periodic attacks of ophthalmia. After the inflammation had subsided, I discovered the parasite floating in the aqueous humour. It was about two inches long. The case created quite a sensation at the time. I operated by penetrating the cornea, making the opening above; the humour spurted out, and with it came the

* 'Trans. Am. Philos. Soc.,' 1st series, vol. ii.

worm, which looked like a fine piece of catgut. I prescribed low diet, with aperient medicine, and kept the eye covered, so as to exclude light. In fifteen days the eye recovered entirely."

In searching the literature of this subject, the accompanying cuts, taken from Müller's 'Zoologica Danica,' vol. iii, p. 49, t. 109, f. 12, were chosen as best exhibiting the characteristics of the parasite under consideration.*

FIG 1.

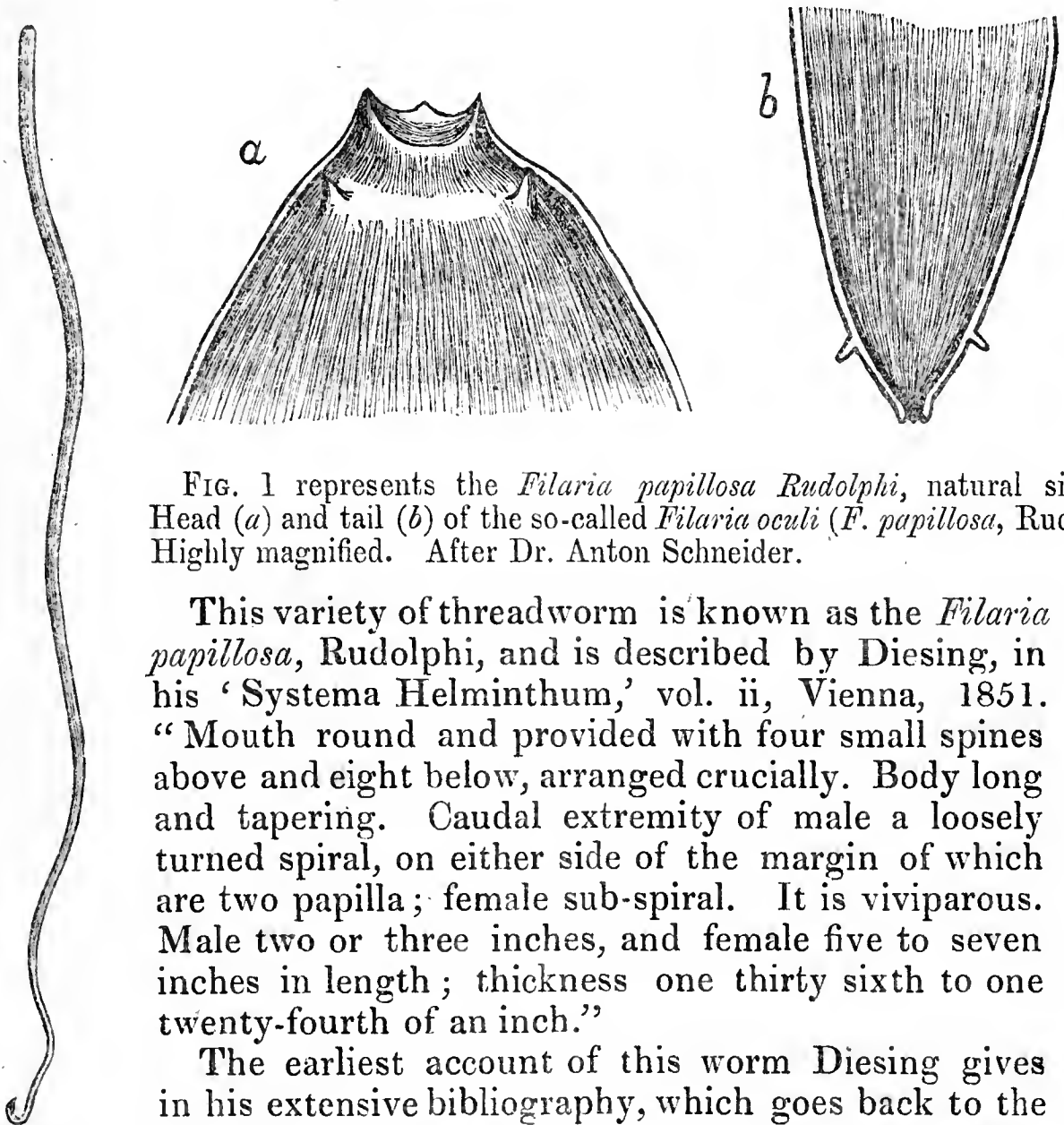


FIG. 1 represents the *Filaria papillosa Rudolphi*, natural size. Head (a) and tail (b) of the so-called *Filaria oculi* (*F. papillosa*, Rud.). Highly magnified. After Dr. Anton Schneider.

This variety of threadworm is known as the *Filaria papillosa*, Rudolphi, and is described by Diesing, in his 'Systema Helminthum,' vol. ii, Vienna, 1851. "Mouth round and provided with four small spines above and eight below, arranged crucially. Body long and tapering. Caudal extremity of male a loosely turned spiral, on either side of the margin of which are two papilla; female sub-spiral. It is viviparous. Male two or three inches, and female five to seven inches in length; thickness one thirty sixth to one twenty-fourth of an inch."

The earliest account of this worm Diesing gives in his extensive bibliography, which goes back to the year 1645, when Spigelius, of Amsterdam, recorded a case of *filaria* in the vitreous humour of the eye of a horse. Numerous interesting cases are referred to as having occurred in Great Britain, with a few in Europe, while the majority are sent by English veterinary surgeons in India to the *Veterinarian*, a standard English journal.

The haunts of this animal may be said to be throughout the entire body of the horse, and Diesing enumerates them as

* The illustrations which accompany this paper have been supplied by Dr. Cobbold as being superior to those selected by the author.

follows :—“ In the cavity of the abdomen, in the muscles and cellular tissue, in the intestines, between the dura and pia mater (Abildgaard), in the vitreous body (Spigelius), in the anterior chamber (Hopkinson, Morgan, Greve, and many others), and still more rarely between the coats of the eye. In the ass and mule, in the abdomen and thorax (Gurlt). In the domestic cattle, in the abdomen, rarely in the anterior chamber (Chaignault and Gurlt).”

Diesing says that he saw such a filaria, and for hours observed it, in the anterior chamber of the eye of a horse. It was several inches long and very white, and in continual lively movement like a serpent.—Veterinary School in Vienna.

Mr. Twining, a resident at Poonah, in India, for sixteen years averaged twenty cases annually, more than fell to the lot of any other individual in Hindostan. The worm of worms, for there are sometimes two or three floating in the aqueous humour at the same time, by their presence cause symptoms of ophthalmia, with great intolerance of light. The worm, he says, is a species of filaria or threadworm, called *Filaria equi*.

Sir Everard Home informs us that *Filaria equi* are found in the circulating blood of the horse, and it is supposed to be transmitted through that medium. Worms have been found in the cœliac artery of the ass, but of greater magnitude. Naturalists have discovered numerous genera and several species—the ascaris, tænia, filaria, strongyla, ligula, &c.—as inhabitants of the body of the horse, sheep, ox, hog, deer, &c.

The most succinct account of this phenomenon is by Sir Chas. Percivall, V.S., in 1825, and published in the *London Veterinarian* for 1828. He says : “ In low, humid situations in India, where frogs are prevalent, or where there is stagnant water, especially after an unusually wet season, worm in the eye is a very common occurrence. It is also seen in other parts during the cold months, from the beginning of October to the latter part of February, and especially during the continuance of an east wind. The symptoms are those of a conjunctivitis; the cornea is obscured by a ‘nebulous effusion,’ the eyelids are closed, and there is intolerance of light.

“ On close inspection a small, white worm can be discerned floating in the aqueous humour, at one time rising to the superior, at another sinking to the inferior portion of the anterior chamber.

“ The method of treatment is by puncturing the cornea at its upper and inner margin, and allowing the parasite to escape with the aqueous humour. This spot is selected for the

operation because the cornea is here least dense, and because the aqueous humour, which gradually re-forms, will be least likely again to escape while the wound is healing.

"These worms find their way into the animal's body along with the water he drinks, either as fully developed parasites or as ova. Both the parasites and eggs are found in the stagnant waters of India."

The *Veterinarian* for 1864, p. 218, contains the account of a case where this species of worm was removed by the operation just described, one from either eye. Beer's cataract knife was used to make the incision. The *Edinburgh Veterinary Review*, vol. vi, for 1864, also contains a very interesting and humorous account of a similar case.

Since commencing this paper I have learned, through a friend, that Dr. Chas. J. Kipp, of Newark, N. J., exhibited, at a recent meeting of the New York Ophthalmological Society, a fine specimen of filaria which he had removed from the anterior chamber of the eye of a horse. The doctor will doubtless publish a detailed account of the case.

Filaria in the Eye of Man.

Although it seems a shocking thing to contemplate, it is, nevertheless, true, that filaria, and living ones, too, have been found in the human eye.

Dr. Nordmann,* of Odessa, describes the circumstances which led him to discover the existence of entozoa in the eyes of several vertebrates; and he gives a minute account of them, illustrated by beautiful figures, representing their form and internal structure. His researches, during the years 1830 and 1831, embraced numerous eyes of horned cattle, sheep, pigs, frogs, lizards and fishes, with some from the human subject, and birds. He found entozoa of the genus *filaria* in the human eye, in that of the haddock (*Gadus aeglefinus*), of the genus *ascaris* in the frog, of the genus *oxyuris* in the perch, of the genus *cysticercus* in the pig, and *trematoda* in great abundance in fishes generally. In fishes he first found entozoa in the vitreous humour, but he subsequently met with them in the crystalline lens and the capsule, between the laminae of the cornea, in the iris and retina, and in the aqueous humour (*Lib. cit.*, pp. 1-6). In the crystalline lens of some fishes they are so numerous as to render it more or less opaque, and thus to impair or injure sight (*Lib. cit.*, pp. 19, 20).

A species of filaria (*Filaria medinensis*?) has been seen under the conjunctiva oculi in the West Indies. Schön has quoted

* Nordmann, 'Mikrographische Beiträge zur Naturgeschichte der Wirbellosen Thiere,' Erstes Heft, pp. 11-13.

some facts of this kind. A case was related to him by Dr. Gaertner, who resided in the West Indies, and considered it to be the guinea-worm.*

Dr. Thos. G. Morton, of this city, has given an interesting account of a filaria (*Dracunculus*, or *Filaria loa*) removed by a native woman from beneath the conjunctiva of the eyeball of a negress at Gaboon, West Africa, with a brief history of the parasite, and Professor Leidy's description of the specimen.†

Cobbold says: "These worms are identical with those described by Guyot as dwelling beneath the conjunctiva of negroes at Congo and the Gaboon region generally."‡ Davaine has reported several similar cases, and refers to them as *La filairie de l'orbite*.§

The *Filaria lentis* (Cobbold), and what is identical, the *Filaria oculi humani* (Nordmann), was discovered by the last-named investigator in the year 1831.|| Dr. Nordmann examined two lenticular cataracts taken from an elderly man, half an hour after they had been extracted by Prof. von Graefe. In one of these, which was partially surrounded by the capsule, he observed in the Morgagnian fluid two very small and delicate rings, which he clearly recognised under the microscope as convoluted Filariae. One of the two had been injured in the middle, so that the intestines had come out of the body, and were visible as slender threads. The other was uninjured, of uniform thickness, three quarters of a line long, and extremely narrow. It was spirally convoluted and dead. A simple intestinal canal, a mouth with visible papillae, a uterus, and a prominent anal aperture could be distinguished (*Lib. cit.*, pp. 7, 8).

In 1832 he was present at two operations of extraction, performed on an old women by Prof. Jüngken, and found a living filaria, five lines and a half long, in the act of casting its skin (in der häutung begriffene), in the lens of the first patient (a case of green, lenticular cataract); no living extraneous body was found in the other lens. The second case was more interesting, as it presented the first example of microscopical entozoa, possessing suckers (*Trematoda Rudolphi*), being found in the human eye; eight individuals of the genus *monostroma* were found in the substance of the lens. These minute beings were situated in the upper strata of the

* 'Handbuch der Pathologischen Anatomie des Menschlichen Auges,' pp. 226, 227.

† *American Journal of the Medical Sciences*, Phila., July, 1877.

‡ 'Entozoa,' London, 1864, p. 288.

§ Davaine, 'Traité des Entozoaires,' Paris, 1860, p. 750.

|| Nordmann, 'Mic. Beiträge z. Nat. d. Wirb. Thiere.'

crystalline ; they were one tenth of a line long, and moved sluggishly when placed in warm water. The examination took place immediately after the operation. In neither case was the opacity complete, and the lenticular substance was soft (Lib. cit., Zweites Heft. Vorwert, p. 9).

M. Davaine also mentions a comparatively recent case of filaria in the anterior chamber of the eye, but full particulars do not appear to be published. The case previously cited is by Sichel,* from whom we gather that the specimen was brought forward by Quadri, of Naples. The living worm was in the vitreous humour of a woman, thirty years of age. The function of the eye was perfectly normal. The latter authority exhibited the parasite *in situ* at a meeting of the Ophthalmological Congress held at Brussels.

Von Ammon found a filaria in a lenticular cataract, of which the nucleus was firm and the exterior pulpy. The cataract was extracted. He has figured the animal of its natural size and magnified.†

Then, again, there is the case observed by Gescheidt,‡ in which Von Ammon operated for congenital cataract. In this case there were four Filariae, of the genus *distoma*. The largest measured one sixth, the smallest one fifteenth of an inch.§

Cobbold considers them embryonic *nematodes*, which have accidentally or otherwise selected the human body as their intermediary host.

Mauthner|| says he saw what he supposed to be a dead filaria floating about in the perfectly clear vitreous humour of a man forty years of age.

Von Wecker, the author of the second half of the fourth volume of 'Graefe and Saemisch's Augenheilkunde,' gives no new cases, but mentions a case of supposed *Filaria spiralis* (?) which he considered a rudimentary persistent hyaloid artery.

The presence of filaria within the human eye is, beyond a doubt, of rare occurrence, no instances on record are of recent date, and our more modern text books and works on ophthalmology either omit them altogether or else refer but briefly to the few cases herein mentioned.

Having occurred once, filaria will doubtless be found again, and if there exists a "*Filaria sanguinis hominis*," as Drs. T. R.

* 'Iconographic Ophthalmologique,' p. 707 ; also Zander, 'Der Augenspiegel,' 2 Auflage, p. 190.

† 'Klinische Darstellung,' Pt 1, vol. xii, figs. 22 and 23.

‡ 'Zeitschrift für die Ophthalmologie,' iii Bandes, iv Heft., p. 405 ; 'Die Entozoa des Auges, u.s.w.'

§ 'Zeitschrift für die Ophthalmologie,' vol. iii, pp. 75, 76.

|| 'M. Optischen Fehler des Auges,' 1872.

Lewis, of India, Bancroft, of Australia, and especially Dr. Manson,* of China, have pointed out, we must look for it wherever the blood circulates.

Seldom is it that the oculist in his busy round stops to scrutinise the cataractous lens he so dexterously extracts, or to examine in minute detail every floating opacity in the vitreous body, and I must confess I am of the opinion that it behoves us to be more on the look-out for the phenomena in question.—*Medical and Surgical Reporter*.

[The writer of this paper will be exceedingly indebted for any reliable account of a worm or worms in the human eye. 1502, Walnut Street.]

ANIMAL DISEASE AT NATAL.

Report of Mr. C. B. H. MITCHELL, Colonial Veterinary Surgeon.

WE have received the following Government Notice relating to diseases of Animals in Natal, which have been under investigation by the Colonial Veterinary Surgeon Wiltshire :

His Excellency the Lieutenant-Governor directs that the following Report of the Colonial Veterinary Surgeon be published for general information.

C. B. H. MITCHELL, Colonial Secretary.

Colonial Secretary's Office, Natal,

July 8th, 1879.

The Hon. the Colonial Secretary.

SIR,—I have the honour to forward, for the information of His Excellency the Lieutenant-Governor, my Report on the work of my department during the past year.

My investigations into the nature and causes of the diseases prevailing amongst animals has been continued on every occasion on which I have had an opportunity, but, in consequence of the war, the attention of stockowners and others has been directed to other matters than farming, and

* In a paper entitled "Report of Hæmatozoa," Patk. Manson, M.D., of Amoy, China, says: "1. That a large ratio of the population of this province, and probably of other parts of China, is infested with the *filaria sanguinis hominis*. The exact ratio cannot yet be stated, but if my observations are a fair guide, one in thirteen is near it. 2. That the *filaria sanguinis hominis* may be present in the blood, and yet the hosts be in good health and exhibit no morbid phenomena. 3. That in the same persons it may be present at one time and absent at another. 4. That at one time or another it is generally associated with *elephantoid disease*, and is almost certainly connected with the causes of such affections. 5. That it is sometimes associated with a diseased condition characterised by frequently recurring attacks of fever, accompanied by general anasarca, unconnected with heart or kidney disease.

I have not been kept so well informed of the outbreaks of disease as I could wish.

The severe drought of last year, and the consequent lack of food for cattle and other animals, caused heavy losses from poverty; but, as I anticipated, the losses from disease when the grass grew, consequent on the sudden change from poverty to plethora, were, I believe, much greater.

The past summer has been unusually unhealthy for horses, and there has been more sickness amongst them than I have ever known since I have been in Natal. The chief disease has been a low fever, which attacked animals of all ages and in all conditions, though those that were well fed and cared for seemed, as far as my observations went, to be less susceptible to, and to recover more quickly from, it. I noticed that horses brought from the Cape Colony and the Orange Free State were much more liable to disease than Natal horses, but then it must be remembered that they had come long journeys, and had the change of food and climate to contend with. Very few cases of fever have come under my notice amongst the horses brought from England; but the system of management and feeding is much better than colonial horses usually receive.

More cases of horse-sickness have come under my notice this year than last, chiefly amongst the horses of the Remount Depôt. I have sought every opportunity of acquiring information relating to this affection, to compare with and aid my own investigations, which up to the present time, tend to support my ideas of its nature, causes, &c., which I embodied in a report on this subject last year. I have studied this matter with very great interest, and am still more confirmed in my opinion that the poison which gives rise to this disease is not due to miasma, nor is it contained in the dew, but in the grass itself, and I am still inclined to the belief in its cryptogamic origin.

In connection with this subject I have the honour to acknowledge, with thanks, the receipt of a valuable report on the "Loodianah Disease," which you kindly obtained from the Government of India at my request. From information obtained from persons acquainted with the Loodianah fever and from the report itself, I have no doubt of its identity with our so-called horse-sickness, both as to its nature and causes, as well as to the conditions favorable to its development, and its rapid course and fatal termination in most cases.

Numerous cases of glanders have come under my notice during the past year, some amongst horses brought from the

neighbouring colonies, but others amongst horses in private stables.

Many of these cases may be prevented, and the spread of this disease checked, by proper care on the part of the owners, and by stricter regulations for its prevention being enforced. I beg to direct particular attention to this matter, because in more than one instance where I have met with bad cases, great carelessness was shown, and an inclination to keep the animal on the chance of its getting better, regardless of the well-known facts that it is very contagious as well as incurable.

The horses of the mounted police have been comparatively healthy during the time they have been under my notice at head-quarters, and few serious cases have occurred.

I visited Estcourt twice to inquire into supposed outbreaks of glanders and farcy amongst the horses of the detachment stationed there; on one occasion meeting with a case of strangles, and on the other with a local disease, which yielded readily to treatment.

A good many cases of sickness have occurred amongst the horses, mules, and cattle of the colonial engineer's department. The poverty to which the cattle were reduced last winter, as well as the prevalence of lung-sickness and other diseases amongst them (consequent on their being exposed to contagion on the roads and outspan places) brought a number under treatment, and it was only by careful feeding and general good management by the persons in charge of them that many were kept alive till there was sufficient grass to enable them to regain their condition.

Amongst cattle there has been an immense amount of disease, and the losses very great. The sudden change from poor to rich succulent food in the spring, acting on animals weakened by poverty, induced those blood diseases which result from the introduction into the system of more nutritious matter than it is able to assimilate, the consequence of which is seen in outbreaks of spon-sickness, melt-sickness, and other affections of a like nature. As far as I can learn, no adequate measures are adopted to prevent this by a liberal system of feeding during the winter—so rendering the change less abrupt and extreme—consequently the state of debility to which animals are reduced renders them very susceptible to disease. Lung-sickness has prevailed in many parts of the colony, and the losses from it have been unusually severe. I am unable to give statistics relating to it, but the losses of cattle which have come to my knowledge lately represent a value of nearly two thousand

pounds (£2000), and this is but a small proportion, I believe, of the actual losses of the colony from this affection during the past year. With such an exceedingly contagious disease to deal with, it is to be regretted that more effectual measures are not adopted to prevent its spread, and I beg respectfully to urge the consideration of this subject, as soon as the state of public affairs will admit, with a view to the adoption of more stringent regulations for its better prevention.

The losses from red-water have been very heavy during the past summer, and continue up to the present time. Until measures are adopted to prevent sick animals from travelling along the public roads, and the ordinance relating to the burial of dead animals is carried out more efficiently, I fail to see how this disease is to be checked, as it is from the poison thrown off in the excretions, and from the *debris* of animals, that the veldt is contaminated.

Sheep suffered severely from the drought of last year, and the lateness of the spring, and from the reports which have reached me I gather that the lambing season was an unusually bad one.

A considerable amount of disease has existed during the past year.

I commenced an inquiry into the affection termed "heart-water," which I have been unable to complete from want of opportunity. "Blue-tongue" has prevailed in some districts, while others have been comparatively free.

A sudden and very fatal outbreak of what appeared to be anthrax fever (*charbon*) occurred in the neighbourhood of Howick; fortunately it did not last long, nor extend very far, and only one or two farmers suffered seriously from it. I could only account for it by supposing that the rains which fell just at that time stimulated the growth of noxious plants, which imparted injurious qualities to the food.

In consequence of the unsettled state of the country, and the attention of the farmers being temporarily directed to other and more remunerative pursuits, the flocks have been neglected, and in many instances left in charge of the Kaffirs; consequently scab has increased in nearly every district to a considerable extent. I trust that the advent of a more settled state of affairs, together with the operation of the new law, will effectually check the spread of this affection.

It will be seen that the amount of disease amongst all classes of animals has been unusually large, and much of it from causes beyond all foresight or control. Leaving the

contagious diseases out of consideration, I find that most of the others are chiefly due to defects in the quality of the food, and that in many cases much may be prevented by a judicious system of management. I believe a great deal of it may be avoided by the laying up of stock of hay for winter use, supplemented by mealies and other food according to the number of stock, the resources of the farmer, and the requirements of the animals to be provided for. It is to be regretted that the cultivation of mangel-wurzel and other root crops is not more general, as their value as food for cattle and sheep during the winter is very great. A better system of feeding and management generally would tend materially to improve the live stock of the colony, by giving them better proportions and greater stamina, and at the same time enable them to yield better returns for the food and care bestowed on them, as well as the capital invested.

In connection with this subject I would suggest that the growth of clovers and other good grasses should be encouraged. As it is, the system of grass-burning is calculated to destroy the finest and best, and with the constant grazing without any adequate return in the way of manure, &c., in the place of the material taken from it, the veldt must become exhausted, as is the case in parts of the Cape Colony at the present time.

Having directed attention to these matters in previous reports, it is perhaps unnecessary to say more at this time. Every one will acknowledge the importance of the subjects referred to, and I trust that with the advent of peace, more interest in, and greater care for, and attention to, our animals generally will result, which will prove to the best interests of the country at large.

I have the honour to be, sir,

Your obedient servant,

S. WILTSHIRE,

Colonial Veterinary Surgeon.

Pietermaritzburg, June 30, 1879.

QUEENSLAND, 1879.—REPORT OF THE CHIEF INSPECTOR
OF STOCK FOR THE YEAR 1878.

To the Honorable the Colonial Secretary.

SIR,—I have the honour to report on the working of
“The Diseases in Sheep Act” for the year 1878.

At the close of 1877 I had to report a decrease of 710,715 sheep on the previous year. I regret to have to report a further decrease at the end of 1878 of 558,738.

This decrease would appear to be solely the result of the late protracted drought. Very heavy losses have been reported, particularly amongst travelling flocks.

In other respects the colony has enjoyed a greater immunity from sheep diseases of every description during the past year than during any similar period since the passing of the present Act in 1868.

Hitherto, in my annual reports, I have arranged the numbers of sheep according to the pastoral districts in which they were kept, the returns up to the present year having been made to the Commissioners of Crown Lands, and assessment forwarded direct to the Treasury by the owners. By direction of the Treasury, however, the returns are now made and assessment paid to the clerks of petty sessions nearest the runs on which the sheep are pastured, so that in the present report I have arranged the numbers, for the first time, according to the districts of petty sessions to which they were respectively returned.

For convenience of reference I have grouped these districts so as to show the number of sheep in the southern, central, and northern divisions of the colony respectively—the southern division comprising the pastoral districts bordering on New South Wales, with Wide Bay and Burnett added, and the northern division comprising the three great pastoral districts of Kennedy, Burke, and Cook.

Hitherto there has been a considerable discrepancy between the number of sheep on which assessment has been paid and those published in the Reports of the Registrar-General, the latter being considerably in excess of those returned to this office. From this it might be inferred that a considerable number of sheep annually escape assessment. I am not, however, inclined to adopt that view, but rather to attribute the difference to the fact that round numbers are in many instances returned to the Registrar-General where exact numbers are returned and paid for under the Sheep Act.

The number of sheep in the colony on 1st January last, on which assessment was paid at the various offices of petty sessions, was as under :

I.—*Southern Division,*

comprising the pastoral districts of Moreton, Wide Bay and Burnett, Darling Downs, Maranoa, and Warrego.

| Districts of Petty Sessions. | Number of Sheep. |
|-------------------------------|------------------|
| Allora | 8,040 |
| Beenleigh | 57 |
| Brisbane | 471 |
| Charleville | 287,073 |
| Condamine and Miles | 36,916 |
| Cunnamulla | 44,839 |
| Dalby | 269,168 |
| Ellengowan | 139,655 |
| Gayndah | 180,023 |
| Goondiwindi | 94,020 |
| Gympie | 7,000 |
| Inglewood | 14,205 |
| Ipswich | 29,862 |
| Leyburn | 25,342 |
| Mitchell | 119,004 |
| Nanango | 28,244 |
| Roma | 312,918 |
| St. George | 129,394 |
| Stanthorpe | 65,688 |
| Surat | 99,197 |
| Tenningering | 746 |
| Thorgomindah | 30,638 |
| Toowoomba | 716,128 |
| Warwick | 178,253 |
| TOTAL | 2,814,881 |

II.—*Central Division.*

comprising the pastoral districts of Port Curtis, Leichhardt, Mitchell, and North and South Gregory.

| | |
|------------------------|------------------|
| Aramac | 515,161 |
| Banana | 23,138 |
| Blackall | 781,796 |
| Clermont | 373,308 |
| Gladstone | 5,367 |
| Marlborough | 3,000 |
| Nebo | 33,248 |
| Rockhampton | 5,298 |
| St. Lawrence | 19,250 |
| Springsure | 263,142 |
| Tambo | 363,127 |
| Taroom | 95,304 |
| TOTAL | 2,481,139 |

III.—*Northern Division.*

comprising the pastoral districts of North and South Kennedy, Burke, and Cook.

| | |
|------------------------|----------------|
| Bowen | 35,492 |
| Hughenden | 62,059 |
| Normanton | 24,255 |
| TOTAL | 121,806 |

Abstract.

| | |
|---|-----------|
| Southern Division | 2,814,881 |
| Central Division | 2,481,139 |
| Northern Division | 121,806 |
| | <hr/> |
| TOTAL | 5,417,826 |
| Number returned for 1877 | 5,976,564 |
| Number returned for 1878 | 5,417,826 |
| | <hr/> |
| Decrease in 1878 | 558,738 |
| The number of sheep that left the colony borderwise during the year was | 423,365 |
| Number introduced border- wise during the year | 82,654 |
| Number imported by sea | 510 |
| | <hr/> |
| | 83,164 |
| | <hr/> |
| Excess of exportation | 340,201 |

Making due allowance for sheep slaughtered for home consumption (say 700,000), and presuming that there was little, if any, increase by lambs in those districts in which the drought and the marsupial pest were felt most severely, the number of sheep that perished from scarcity of feed and water cannot have been far short of half-a-million.

The number of stud sheep introduced during the year were :

| | |
|------------------------|-------|
| (1) By sea : | |
| Merino rams | 503 |
| Lincoln rams | 7 |
| | <hr/> |
| | 510 |
| (2) Borderwise : | |
| Merino rams | 1372 |
| Merino ewes | 5282 |
| | <hr/> |
| | 6,654 |
| | <hr/> |
| TOTAL | 7,164 |

A considerable proportion of the merinos introduced by sea were greatly above the average quality of stud sheep, several of the lots having been prize-takers at the annual ram show at Melbourne. Those introduced borderwise were for the use of runs on the Ward, Paroo, and Barcoo rivers.

Whilst the clip in the western districts is said to have been up to the average of favorable seasons, that on the whole of the country lying east of 147° east longitude was reported to having been exceptionally light.

The necessity for legislation to regulate the traffic in travelling sheep was again forced on the attention of the Government during the past year, and a Bill on the subject, based on the principle of the law in force in New South

Wales, was drawn up, and is now available, should it be deemed advisable to introduce it this session. The principle of the proposed measure is, that all sheep shall travel on permit (obtained free of charge) to a destination specified in the permit; but should they return to the run or district from which they originally started within a certain period, they must do so on a renewed permit, for which the owner shall pay a grass charge at a fixed rate—say one penny per mile per 100 sheep—to cover the whole distance travelled from the time of starting until their return.

The Draft Bill was submitted to several owners who take an active interest in the subject—including some who had to travel sheep during the late drought—and by them it was suggested that instead of levying the charge at per mile, it should be calculated at per diem, and thus obviate all cause of dispute as to the actual distance travelled—disputes of that nature having, as I am informed, occurred in the course of working the New South Wales Act.

Cattle.

Although the returns of cattle made under the Brands Acts are valueless as affording information as to the actual number of cattle in the Colony (no returns are made by those owning less than fifty head), still it would appear from the returns already to hand, that the losses from drought during 1878 have not been by any means so heavy as was generally anticipated. The assessment paid early last year represented a total of 2,140,700 stock (horses and cattle) in the Colony at 1st January, 1878, whilst up to the present the assessment received for the current year represents a total of stock (horses and cattle) at 1st January last of 1,960,000, showing a falling off of only 180,007, with further returns yet to be received from distant districts.

During the year, 133 bulls, of the declared value of £12,248, and 78 cows, of the declared value of £3912, were imported by sea from the southern colonies. In addition to these, a large number of valuable shorthorn bulls and heifers were introduced borderwise into the western districts from some of the best pure herds of Victoria.

The prohibition against cattle from the United Kingdom having been rescinded, it became necessary to make further provision for keeping in quarantine any animals that may be shipped for this colony. We have already stables at Dunwich to accommodate nine cattle; but, as the term of quarantine has been fixed at ninety days, it is necessary that accommodation be provided sufficient to keep different ship-

ments distinct, so that new arrivals may not go into contact with those that have already passed a considerable portion of their term in quarantine.

Permission having been granted to erect the additional stables on the Island of St. Helena, the necessary steps have been taken for the construction of a building with loose-boxes to accommodate ten cattle.

The island is admirably suited for the purpose, now that the jetty is in course of completion; and, if it can be arranged that the stock be placed under the surveillance of Mr. Macdonald, importers may rely on their being carefully tended. The cost of the building is to be defrayed from an unexpended balance that has been standing for over twelve years to the credit of a fund raised under the Act, "The Diseased Animals Act," under which the restrictions on imported stock are imposed. I have, &c.,

P. R. GORDON, Chief Inspector of Stock.

BRISBANE, 16th April, 1879.

SOUTH AUSTRALIA.—REPORT OF CHIEF INSPECTOR OF SHEEP FOR THE HALF-YEAR AND YEAR, ENDED DEC., 1878.

CROWN LANDS OFFICE, ADELAIDE, FEBRUARY 17th, 1879.

THE following report from the Chief Inspector of Sheep is published for general information.

THOMAS PLAYFORD, Commissioner.

INSPECTOR OF SHEEP'S OFFICE, ADELAIDE, FEBRUARY 10th, 1879.

Sir—I have the honour to forward my report for the half-year and year ending December 31st, 1878.

The flocks remain free from the scab disease.

Neither fluke nor coast disease have appeared in a malignant form. The dry season which has been experienced in the south-eastern districts has not been favorable for the development of either disease.

The flocks remain free from any other infectious or contagious disease, and although trifling losses have occurred during the year, such losses arise principally from local causes, and in some instances from the carelessness exhibited in the management of sheep.

The inspector in the Wellington District reports having examined during the half-year the following travelling stock. viz.—67,850 sheep, 1397 cattle, and 1000 horses.

Three persons were fined £10 each at Mount Gambier, and two at Redruth, for introducing stock from other colonies

without giving notice to the inspectors, under Clause 10 of Regulations of February 20th, 1878.

The staff have inspected during the half-year 540,000 sheep, 25,000 cattle, and 2 horses, and travelled on duty over 11,000 miles.

The past year has been favorable for stock, although in isolated cases the rains came too late to give a heavy clip of wool. The clip has, however, throughout the province, generally been good, sound, and clean. In the far north and south-east feed has been abundant, but since the end of the year there has been great destruction of both grass and sheep, in the latter district by fires.

Pleuro-pneumonia continues to prevail in the north, but in other districts the reports note no more than isolated cases. In the northern district numerous cases have come under the notice of the inspectors, and a number of deaths have occurred in various places. A few diseased animals have been destroyed under Sections 12 and 14 of Regulations of February 20th, 1878. One diseased animal was destroyed by order of the inspector at the border, and seven others of another drove were also destroyed under instructions from the inspector. The mortality has not been great in any herd that has come under the inspector's notice, with one exception, in which a loss of over 50 per cent. occurred; but a small percentage out of a large number of small herds have died.

A much greater willingness has lately been evinced by small stockholders to inform the inspectors of the existence of any disease amongst their cattle, and in nearly all cases the instructions and advice of the inspectors have been carefully and cheerfully carried out.

In consequence of complaints from the north of the prevalence of pleuro-pneumonia, printed circulars have been issued, including Sections 12, 13, and 14 of Regulations of February 20th, 1878, and the inspectors have been instructed to take action against any person infringing such regulations.

The northern inspector reports that since this has become known greater care has been shown in the removal and treatment of any animals suffering from pleuro-pneumonia.

During the year there have been more losses than hitherto from pleuro-pneumonia, and the disease has extended over a greater area than previously, although no such losses as 50 or 60 per cent. have occurred, as in former years, in large herds; still many small holders have suffered what to them is a serious loss. Having only one inspector stationed in the north much of my information is derived from private sources,

and when it is too late for action to be taken. With more power to deal with pleuro-pneumonia and more inspectors, the staff would be of greater value to the country, and even with the present regulations I require another inspector to be stationed farther north, and one to look after cattle coming into market within 20 miles of Adelaide, which I find it impossible to examine and attend to other duties.

The losses from pleuro-pneumonia are too well known to need speaking of, but the value of action taken against disease is noted in Great Britain, and is remarked upon by Professor McCall, at Glasgow, who states “that in that city alone there was in twelve years an annual loss of £4556. For the past three years after the Contagious Diseases Act came into force the annual loss was reduced to £650 per annum.” Under that Act diseased animals were killed and compensation allowed. He further states:—“He was of opinion that if all the local authorities did their duty the ravages of pleuro-pneumonia, like those of cattle plague, would become a tale that had been told.”

Destruction of diseased, and isolation of infected animals, as well as inoculation of the remainder of the herd, has been encouraged, and although the latter advice has not been followed to so great an extent as the two former, I may say the practice of the system has increased. I have to thank several cattle owners who have visited Adelaide from Queensland for encouraging the practice of inoculation, showing the benefit they themselves have derived from it, and taking the trouble to initiate others into the practice here.

Arrangements are likely to be made by which a supply of lymph may be obtained at small cost by stockholders, who are doubtful as to their ability to procure good lymph. This will encourage the practice of a system of inoculation as preventive against pleuro-pneumonia, which has been so successfully practised in Queensland and New South Wales.

The inspectors complain of the difficulty of dealing with diseased cattle running on reserves and waste lands where ownership cannot be traced, and there is no provision in the regulations dealing with cattle in such places. It is by means of infected animals mixing with other cattle on such places, belonging to perhaps half a dozen different owners, that infection is carried to different parts of the district. The inspectors should have power to destroy diseased animals found running at large to the detriment of the public, if not able to find the owner.

The imports by land from New South Wales during the year have been 157,511 sheep, 15,170 cattle, and 623 horses;

from Victoria, 36,640 sheep, 4100 cattle, and 1714 horses; from Queensland, 4365 cattle, and 141 horses, were brought to the markets, and 10,000 sheep and 1000 cattle introduced for the purpose of stocking a portion of the northern country.

The importations by sea have been from England—4 thoroughbred horses; from Victoria—8 merino, 7 Lincoln, and 5 down stud sheep, 28 shorthorn bulls, 19 heifers, and 919 horses; also 42 stud sheep from Tasmania.

The exports by sea have been 63 stud sheep to Victoria; 178 stud sheep to New Zealand; 106 to New South Wales; and 12 to Natal, all merinos; and 1800 fat sheep to Tasmania.

The importation of horses into the province, although there is now a cessation in the supplies forwarded, amounted to the large number of 3401 during the year, and these have apparently been all absorbed at fair prices.

In consequence of the action taken in other colonies in removing the prohibition against stock from places beyond the Australian colonies, I have prepared stock regulations for the admission of cattle, sheep, and swine, from Great Britain and Ireland, the dominion of Canada, and the United States of America.

Preparations are being taken to have quarantine yards erected on the south part of Torrens Island, where imported animals may be quarantined for a term of ninety days. Until such yards are near completion it would be premature to remove the prohibition. By strict adherence to the quarantine regulations I hope the risk of introducing disease may be reduced to a minimum. The necessity for great care will cause a heavy expense on the department in the erection and maintenance of the yards. The expense of quarantine will likewise be heavy to the importer.

I have not yet received the latest reports of stock in the Australian colonies, but as no public notice of fresh outbreaks of any kind have been received, it may be presumed that the stock continue healthy.

In Great Britain foot-and-mouth disease continues to prevail in about the same number of counties, fresh outbreaks taking the place of those in which the disease has either been eradicated or died out. By the last returns received it was prevalent in fourteen counties.

According to the latest intelligence cattle plague is still largely prevalent in Russia and Austria, and is still existing in Turkey.

Orders in Council have been issued in Great Britain, under

the new Diseases in Animals Act, which deal stringently with the movement and destruction of animals, the quarantine of places, and the disinfecting of both animals and places ; also transit orders for infected areas, which deal also with the movement of animals, and with the cleansing and disinfecting of trucks, vans, sheds, vessels, &c.

The whole of these orders are most elaborate, and if they can be carried out would no doubt be effectual in clearing the country of disease. Unfortunately I am afraid that the exact particularity and the number of the orders will affect their value. To deal with all matters connected with animals it is a necessity that the law should be as plain and simple as possible, otherwise the large body of men connected with the working of stock will fail to understand them ; some through inability, many from the want of time to wade through so many orders, which must be confusing to persons who are chiefly engaged in out-door pursuits, and others through carelessness.

I would take advantage of this report to direct attention to the Brands Act, as the inspectors of sheep are inspectors of brands under the Act which will come into force on the 1st of May next. The value of this Act, judging from the reports of a similar measure in Queensland, will be very great. The adoption of a uniform system of brands, namely, —one letter and two figures, the letter placed either before, after, or in the centre of the two figures, will make a mark on stock which will at once show every person that such animals are South Australian, or came from that province. Queensland having adopted two letters and one figure, and in New South Wales every imaginable figure or sign has been adopted, causing irremediable confusion. The South Australian brand will be distinct.

So far, in making preparations for the initiating of the Brands Act, I have only met with one or two persons who have not cheerfully given up their old brands and intend adopting the system as mentioned.

As many persons are anxious to register their brands at once, I would call attention to the fact that no brands can be registered or fees received by me until the Act comes into force, viz. on and after 1st May next.

As there are between 7000 and 8000 different brands formed by the combination of two figures and one letter, and six months is allowed to register a brand, I do not think that any one need be anxious or afraid he will not obtain a suitable brand.

The particular attention to the drovers' clauses should be

given both to farmers and dealers, as they are strict with regard to the movement of all kinds of stock from any distance beyond five miles without a waybill or delivery note.

The success of the Act will depend greatly upon the co-operation of the squatter, the farmer, and the police, in rendering assistance to the inspectors.

I propose to report to you before the Brands Act comes into force on the prominent features of the Act for the information of the public.

I have, &c.,

C. J. VALENTINE, Chief Inspector of Sheep.

The Honorable Commissioner of Crown Lands.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

MONTHLY COUNCIL, Wednesday, August 6th, 1879, the Duke of Bedford (president) in the chair.

Veterinary Committee.

The *Hon. W. Egerton, M.P.* (chairman), reported that the committee had received the following report from Professor Simonds:

"During the past month only two or three applications have been received from Members of the Society asking for veterinary advice, and none of these had reference to any serious or extensive outbreaks of disease.

The first in order of time was a communication from Mr. C. W. Hamilton, of Hamwood, Clonee, Co. Meath, asking for advice relative to rams affected with suppression of urine, arising from an accumulation of calcareous deposits in the urethral canal. In the reply which was sent, the several causes of the affection were pointed out, with especial reference to the kinds of food and general management which gave rise to urinary deposits; and instructions were given as to the selection of food and system of feeding of the animals with a view to the prevention of the malady. The necessity of exhibiting an occasional dose of aperient medicine, to be followed by diuretics, and allowing the sheep daily walking exercise to induce them more frequently to evacuate the contents of the bladder, was also pointed out. It may not unreasonably be hoped that these instructions were satisfactory, as no other questions have since been asked.

The second application came from Mr. Hoblyn, of St. Columb, Cornwall, who telegraphed to the effect that his cows and young stock had become suddenly attacked with swelling of their feet, accompanied with much pain and lameness. It was at first thought that the animals were attacked with 'foot-and-mouth disease,' and instructions for their treatment, and the steps which were to be taken in conformity with the regulations of the 'Contagious Diseases (Animals) Act,' were promptly forwarded. The next day a telegram was received to the effect that the animals were all better, and it subsequently transpired that the affection was simply due to local causes, and chiefly to their having been kept on wet pasture ground.

The third application was by letter from Mr. A. Spurr, West Coker, Yeovil. The case was one of a discharge of blood with the milk, that had shown itself in a heifer which had calved in April last. The cause of the hæmorrhage was explained, and instructions were given as to the means to be adopted to arrest the bleeding. No further communication as to the progress of the case has since been received.

In addition to these cases, mention may be made of an experiment which was had recourse to for the purpose of determining whether some sheep imported from America were the subjects of 'foot-and-mouth disease.' The Government inspectors had determined that they were so affected; but through the kindness of Professor Brown I was allowed an opportunity of testing this opinion by direct experiment. A lamb was selected for the purpose, and inoculated by making a few scratches with a lancet in the front part of each fore foot, immediately between the digits, where the skin is thinly covered with hair. On the third day of the inoculation a large vesicle, perfectly characteristic of 'foot-and-mouth disease,' was developed in one foot, but no effects were produced in the other. The progress of this vesicle was regular, and in two or three days it had declined. The inoculating material was obtained from the foot of one of the American sheep, in which *broken vesicles only* were found to exist.

In concluding this report I have to inform the Committee that satisfactory progress is being made in the experiments relating to the propagation of trichinosis from its original source in pigs imported into this country from America.

JAS. B. SIMONDS."

The *Chairman* reported that the Committee had authorised the Secretary to communicate with the Royal Veterinary College to see if arrangements could be made for the examination of students competing for the Society's veterinary medals and prizes from the Scotch Veterinary Schools, similar to those made in the case of Sir Frederick Fitzwygram's prize.

This report was adopted.

Entomological.

The *Secretary* reported that he had received from Mr. Carruthers the following report on the locusts sent by Her Majesty's High Commissioner from Cyprus, which was ordered to be published in the 'Proceedings of the Council,' and a copy transmitted to the Foreign Office:

"The specimens forwarded to me consisted of several specimens of *Coloptenus italicus*, and two specimens of *Tramnotrigon Ledereri*.

The *Coloptenus italicus* is a migratory locust, which is very destructive to vegetation in the north of Africa and in Asia. The specimens first sent from Cyprus no doubt represent early stages of this insect, which, in its perfect state, has large wings, capable of long sustained flight. The *Tramnotrigon*, on the other hand, has undeveloped wings that are incapable of flight.

It is stated that the locusts 'at Papho and Limassol are of different species from the ordinary locust of the island.' Perhaps the unexpected differences in the movement of the locusts may be due to the presence of different species, having very different habits. It would be desirable to obtain specimens of all these insects in their perfect state, so that we may discover what are the enemies that have to be dealt with.

Major Bowlby proposes to take steps for collecting the eggs between the 1st July and the 1st December, when they are dormant in the ground. This is certainly the stage in the insect's life when it can be most effi-

ciently attacked. The female deposits a mass of eggs cemented together with a mucous substance, in a slightly curved hole which she makes in the ground within an inch of the surface. This operation is probably repeated until several egg-clusters are deposited. Major Bowlby estimates the number of eggs laid by each female at 90.

The efficient prosecution of Major Bowlby's plans for collecting the eggs must help greatly to ameliorate the plague. I would, however, venture to submit that, as the eggs are destroyed by exposure to the sun, the surface of the ground should be broken up, wherever it is practicable, by harrowing or shallow ploughing. The eggs will thus be exposed to the birds that feed on them, and those that escape being consumed will have their vitality destroyed by being completely desiccated. Unless some systematic method of turning up the whole surface of the earth is adopted by the collectors, this would be a more effective way of securing the complete destruction of a season's eggs.

When the eggs are hatched, which from Major Bowlby's report appears to be early in March, steps must be taken to trap the young insects. The method invented by Mr. Mattei, and adopted by Major Bowlby, appears unnecessarily complicated. If, instead of digging the pits or trenches for catching the locusts, in the direction of the line of their progress, they were dug at right angles to it, there would be no need to erect the oil-cloth traps to arrest their progress, and drive them into pits. The young locusts in their progress would fall into the pits, and perish at the bottom. The pits or ditches should be two feet wide and two feet deep, with perpendicular sides. No zinc covering is employed for such ditches in America. The use of the oil-cloth screen and the zinc cover may be necessary where the ditches cannot be dug to a suitable depth.

Great benefit has been secured in America by drawing light metal pans over the fields, in which the wingless insects are caught. 'A good and cheap pan is made of ordinary sheet-iron, eight feet long, eleven inches wide at the bottom, and turned up a foot high at the back and an inch high at the front. A runner at each end, extending some distance behind, and a cord attached to each front corner, complete the pan, at a small cost. It is easily pulled by two boys; and by running several together in a row, one boy to each outer rope, and one to each contiguous pair, the best work is performed with the least labour.' The bottom of the pan is covered with kerosene, or some kerosene is floated on the surface of a little water placed in the bottom. The kerosene is speedily fatal to the locust.

Much has been done in the Western United States to cope with the locust, where it is often very destructive to the crops. Dr. Riley, in the 'Seventh, Eighth, and Ninth Missouri Entomological Reports,' and in his separate work on the 'Locust Plague in the United States' (1877), has recorded the experiences of the locust, and the various efforts which have been made to destroy it. Copies of these publications should be in the hands of Major Bowlby; he might find some of the plans described by Dr. Riley fitted for the special conditions which exist in Cyprus.

The services of the natural enemies of the locust should not be undervalued; and especially should the increase of insectivorous birds be encouraged. Amongst the indigenous birds of Cyprus, there are a considerable number that should be serviceable in this direction, and some of them, like *Glareola pratincola*, the locust is the favourite food. Pigeons, common fowls, and pigs greedily devour the locust.

WILLIAM CARRUTHERS."

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

THE usual quarterly meeting of the above Society was held at the Blackfriars Hotel, Manchester, on Wednesday evening, June 25, 1879, W. Dacre, Esq., president, in the chair. There were present:—Messrs. Peter Taylor, Tom Taylor, W. A. Taylor, T. Hopkin, E. Faulkner, J. B. Wolstenholme, J. O. Martin, John Lawson, Alex. Lawson, of Manchester; W. Pallin, Esq., 20th Hussars; Stewart Wilson, Esq., 12th Lancers; Messrs. Hutcheon and Leather, of Liverpool; A. Darwell, Knutsford; A. Robinson, of Greenock; J. Herst, Oldham; H. Bean, Macclesfield; H. Fergusson, Warrington; W. Woods, Wigan; W. Whittle, Mosley; T. Briggs, Bury; Dr. Renshaw, Altrincham; and the Secretary.

Letters were read from Prof. Pritchard, Prof. McCall, Prof. Williams, Messrs. T. S. Faulkner, C. Challinor, C. W. Elam, H. Thompson, M. E. Naylor, E. Sudren, T. A. Dollar, J. Welsby, and M. J. Roberts, who were unable to attend.

The *Secretary* also read a letter from Mrs. Alfred Challinor, thanking the members for their kind address of condolence and sympathy on the death of her late lamented husband.

Before commencing the business of the meeting the *President* referred to another loss the Society had sustained by the death of one of its earliest members, and he hoped before the close of the meeting some member would propose that a letter of condolence in the usual form offered by the Society in the shape of a memorial address be forwarded.

The *Secretary* nominated for membership—Mr. G. Humphries, Manchester; Mr. Walter Holland, Manchester; Mr. Joseph Leather, senr., Liverpool, and Mr. H. T. Hodgkinson, Rochdale.

Mr. W. A. Taylor then read the following report of the Electioneering Committee:

The duty I have to perform is short, but in one respect, I am pleased to say is sweet. Your committee, which was appointed at the last meeting, met on one occasion only. At that meeting they decided on the course they should pursue with reference to bringing about the election of the gentleman, the nomination of this Society, as a Member of Council of the Royal College of Veterinary Surgeons. That gentleman is Mr. Whittle, and I am pleased to say that the result is, that he has been elected a member of that board.

Mr. W. Whittle, in response, said he thanked the members and those who had awarded him their vote kindly and sincerely for the honour they had conferred upon him.

Mr. Pallin, 20th Hussars, then brought before the meeting several interesting cases, illustrated by specimens of same, including one of "rheumatic arthritis in a horse, others of disease of the vertebra, disease of the spleen, lipoma, dislocation of the atlas and dentata in a horse," all of which were carefully examined, and a long discussion ensued, in which nearly all members took part. At the close of the meeting a cordial vote of thanks was accorded Mr. Pallin for his kindness in bringing the above before the members.

Mr. W. Dacre also placed upon the table a morbid specimen of "diaphragmatic hernia" of long standing; also "rupture of the flexor tendon," with the history of both cases; these were fully discussed, and the thanks of the meeting were accorded to Mr. Dacre.

In the absence of Mr. Sudren the *Secretary* exhibited a peculiar specimen sent by that gentleman, supposed to be an ossified brain of a horse, weighing $4\frac{3}{4}$ lbs., and resembling the brain in formation; the history of the case is as follows:—On March 2nd, a brown gelding, 16 hands 2 in. in height, was brought to the horse slaughterers to be slaughtered, he suffering from elephantiasis and stringhalt. He was struck in the ordinary way with a pole-axe without any effect for about a dozen times, when the owner (who was present) said they had better stick him, and that he had always been a stupid animal, and did not care for any amount of punishment inflicted by the whip; this fact led to the discovery of the specimen, for on looking into the skull the tumour was found surrounded by a limpid fluid. Mr. Sudren did not see the head, so could not say what amount of brain substance was left, or the exact position of the bony tumour. After an animated discussion the members were of opinion that it was not ossification of the brain, but an osseous tumour which had gradually formed in the cranial cavity.

Mr. W. A. Taylor then craved the attention of members in order to ask them to bear him out in the desire that a letter of condolence be forwarded to Mrs. W. J. Challinor, sympathising with her in the great loss she had sustained by the death of her husband. Mr. Taylor, in the course of his remarks, said that by his death a gap had been created in the ranks of the society. He was, I believe, one of the original members, I may say one of the oldest members, and at the commencement of the society he gave it perhaps more attention than he had done recently. However, he was a good man, and one who supported our cause on every occasion when he had an opportunity of doing so. I am sorry to be in the position I am, but shall ask some member to second a motion to the effect that our secretary send a letter of condolence sympathising with Mrs. Challinor in her bereavement.

Mr. John Lawson very cordially seconded the motion.

Mr. W. Whittle said he had known Mr. Challinor for the last thirty years, and no one could regret his death more than he did, or sympathise more truly with his widow. He begged to support the motion, which was carried unanimously.

Mr. W. A. Taylor, the President, and Secretary, were nominated a committee to draw up the letter.

A vote of thanks to the chairman closed the meeting.

YORKSHIRE VETERINARY MEDICAL SOCIETY.

THE usual quarterly meeting was held at the Queen's Hotel, Leeds, on Wednesday, the 23rd July, the president, Mr. Peter Walker, in the chair. The following members were present, viz. Messrs. Jas. Freeman, Naylor, Greaves, J. S. Carter, Cuthbert, Bale, Murdoch, Parlane Walker, Lodge, Beeson, Deighton, and the Secretary. Mr. Greenhalgh, student, was also present as a visitor.

Apologies for non-attendance were received from Messrs. Dray, Danby, Joseph and John Freeman, and Mr. Ferguson.

The minutes of the previous meeting were read and confirmed.

Mr. John Nettleton, M.R.C.V.S., Northallerton, was nominated for membership.

Mr. Greaves introduced the subject of a very unfortunate matter, now

in process of legal dispute. A member of the College, a very respectable and highly practical man, was being sued for a very large sum of money, nearly £200, for having, as it is alleged, passed a valuable hunter as *sound* in his respiration, whereas in twelve days afterwards two veterinary surgeons of eminence had certified that the said horse was *unsound* in his respiration. The affection of the respiratory organs in question he understood to be roaring, and he was desirous to know the opinions of the members present as to the causes of roaring, and whether this affection can be produced in less than fourteen days without any preliminary attendant symptoms, such as cough, sore throat, febrile symptoms, &c., &c. He had also understood that the seller of the horse in question—an officer of the Guards—was not aware that any impediment of the respiration was in existence.

Mr. Cuthbert made a few observations upon the case in question, and then related an instance of roaring coming on within fourteen days without any preliminary symptoms.

Mr. Parlance Walker said it occasionally happened that a horse became a roarer after a lengthy and severe gallop.

Mr. Naylor had known instances of horses becoming suddenly affected with roaring in consequence of some violent collision, producing partial paralysis of the recurrent nerve.

Messrs. *Freeman*, *Carter*, and the *Secretary* also expressed their opinions that roaring may be produced in a horse in a few days without any visible premonitory symptoms.

A unanimous expression of opinion was given that the action against the veterinary surgeon in question ought to be defended.

The *President* then gave the history of a diseased ovary in a cow.

Mr. Freeman described a case of diseased frontal sinuses in a horse.

Mr. Parlance Walker narrated the history of somewhat an occult disease attacking dogs, which he attributed to the affection, dumb-madness.

Mr. Naylor was of opinion that the dogs spoken of by *Mr. Walker* were affected with dumb-madness, and gave the history of some similar cases. He recollected a mad dog once travelling from seventy to eighty miles away from his home in less than twelve hours.

Mr. J. H. Ferguson, of Leeds, kindly volunteered to read a paper upon "The present epidemic of pig typhoid in Leeds" at the next meeting.

WM. BROUGHTON, *Hon. Sec.*

Veterinary Jurisprudence.

A SHORTHORN CAUSE CELÈBRE.

A CASE of great importance to shorthorn breeders and to all interested in pedigree stock has been tried before *Mr. Justice Hawkins* and a jury at the Gloucestershire Summer Assizes.

Mr. Allsopp, M.P. for Eastern Worcestershire, sought to recover damages from *Henry J. Hopkins*, Moulton Grange Farm, Northampton, for an alleged breach of warranty, and false and fraudulent representation with respect to the pedigree of a short-horn bull, known as "Grand Patriot 2d," purchased by the plaintiff of the defendant at the Birmingham annual show and sale in March, 1875. The facts of the case, as appearing from the speech of *Mr. Staveley Hill*, Q.C., in opening the case, were as follows:—The animal was entered in the catalogue of the show as under:

"317.—Exhibitor: Mr. Henry J. Hopkins, Moulton Grange Farm, Northampton. Breeder: Lady Wake, Pitsford Hall, Northampton. 'Grand Patriot 2d,' roan, calved April 9, 1874; got by 'Grand Patriot' (31312); dam 'Graceful,' by 'Second Cherry Duke' (28170); granddam 'Ruby,' by 'Crown Prince' (21510); great granddam 'Rosamond,' by '12th Duke of Oxford' (19633); great-great-granddam by 'May Duke' (13320). 'Grand Patriot' won first prize at Birmingham Show (Aston Park), 1873, as well as other prizes;" and upon that representation Mr. Allsopp's farm bailiff bought him for 115 guineas. In May, 1875, he was put to service with some of the best cows in Mr. Allsopp's herd, and proved such a good stock getter that between that date and August, 1877, he had fifty-eight calves. Instead of the calves being superior animals, however, as they would have been if the bull had had the pedigree he was represented to have, all the animals worked gradually back to the original common stock, many having black, grey, or dirty noses, and nearly all showing the doubtful character of some unknown breed. A letter was received from the Shorthorn Society throwing doubts on the ancestry of "Grand Patriot 2d," and the result of Mr. Allsopp's inquiries through his law agent was to establish the following facts:—In 1870 a Mr. Cottrell Dormer, now of Westmoreland, but then living at Courteen Hill, not far from where defendant lived, sold two cows to Mr. Drury Wake, of Pitsford, Northamptonshire, for £30. One of the cows was a white cow with a black nose. Mr. Wake kept the cow until the 16th September, and then put her to a good "5s. bull" belonging to a neighbour, and in the following June she produced a light roan cow calf. On the 23rd June, 1873, this calf was taken to Mr. Hopkins' shorthorn bull "Grand Patriot," and in due time produced a bull calf. At the time of serving Mr. Hopkins made some remarks about the heifer, and said if the calf was a bull he would give £5 for it; and accordingly, as the calf was a bull, it was sold to Mr. Hopkins for that sum. That was the history of "Grand Patriot 2d." Its granddam, the white cow with the black nose, which originally belonged to Mr. Dormer, was called "Ruby," and its dam, the light roan, was named "Graceful." The dam was stated in the show catalogue to be by "Second Cherry Duke." This bull was selected as the grandsire because it was a highly descended bull, but unfortunately for the success of Mr. Hopkins, and fortunately for the proof of the fraud, "Second Cherry Duke" was not sold to Mr. Dormer until June, 1871, while it was alleged by defendant to have served "Graceful" in May, 1871. A short time before the Birmingham Show in 1875, Reuben Moore, a man in the employ of the defendant, went to Tucker, the bailiff of Mr. Drury Wake, and told him that his master was going to show the bull at the exhibition, and asked him to sign a form of entry showing the name of the breeder. Tucker did so, and put the name of Lady Wake. Some time before this defendant had gone to Mr. Gardner, and inquired the number of "Second Cherry Duke" in the 'Herd-Book,' and used that bull's name as being the sire of "Graceful." Among the witnesses examined were Mr. Lythall, Birmingham, and Mr. H. J. Hine, secretary of the Shorthorn Society. Mr. William Houseman, on being examined, deposed that he was the confidential manager of Mr. Thornton, the shorthorn auctioneer, and had been connected with shorthorns for thirty-five years. He had gone over that portion of Mr. Allsopp's herd which was the produce of "Grand Patriot 2d," and he estimated the total depreciation at £1043. Mr. Strafford, London, was also examined, and said the pedigree had been very cleverly put in, the crosses having been judicious. He had examined the herd, and saw that there was a terrible

daub in the character, and there were plenty of white ones with black noses. In the course of the defendant's evidence, his agent, Mr. Powell, Q.C., being dissatisfied with his refusal to give answers, withdrew from the case. The jury found for the plaintiff, damages £750.

The *Gloucester Journal*, commenting on the case, gives expression to the following appropriate observations :

"Serious as the result of the action, both moral and material, may be to the defendant, the plaintiff suffers in a manner and to an extent which compels sympathy. Mr. Allsopp is well known to have spent many thousands of pounds in maintaining the purity of shorthorn breeding, and great credit is due to him for the public spirit he has shown in this matter. Even as the winner of the action, he stands to lose a considerable amount, for a portion of his outlay, at least, will be irrecoverable from the defendant; but he also has to bear indirect consequences of the fraudulent pedigree and the taint thereby introduced amongst his famous herd. The female progeny of 'Grand Patriot 2d' were mated with Mr. Allsopp's two thousand-guinea bull, and ought therefore to have produced first-class and very valuable stock, had their pedigree been untainted on the mother's side; but when the spuriousness of the grandsire's pedigree was discovered he was at once turned into butcher's meat, and a similar fate awaits all his produce, a destiny which involves the ultimate loss of several thousands of pounds. Besides this, it will take from twelve to fifteen years thoroughly to eradicate the taint from Mr. Allsopp's herd; and it was only by adopting the rigorous and costly expedient of extermination that the absolute purity of the herd could be re-established."

CLAIM AGAINST A FARRIER—CONFLICTING EVIDENCE.

BEDFORD COUNTY COURT.

WILLIAM KAY, coal merchant, of Girlington, sued a farrier, named James Proctor, of Thornton Road, for the recovery of £45, being the value of a horse which it was alleged the defendant had killed by negligent, unskilful, and improper shoeing, and subsequent ill-treatment. Mr. Berry appeared for the plaintiff, and the defendant was represented by Mr. L. Gane, barrister.

It appeared that the horse in question being in need of shoeing was taken to the defendant's place, where one of the defendant's men shod it. On the following day, the 27th March, the plaintiff noticed that it was going lame, and he ordered his driver to get it examined, as he thought it had been pricked. The animal was treated by the defendant, but its condition grew so dangerous that Mr. Thomas Collins, veterinary surgeon, was called in. He pronounced that its recovery was impossible, and in a few days the animal died. The plaintiff, in giving evidence, stated that on the 25th March he sent the horse to get shod. He had had the horse five years, and it was three years old when he purchased it for £50. Its value had depreciated only £5 in the meantime, and it had always been sound and healthy. On the 27th March he sent the horse to get shod, and on the following day he noticed it was going lame, and he ordered the carter to take it to be examined, as he thought it had been pricked. Some time afterwards, the horse growing worse, he ordered it to be taken into the stables. The defendant had seen it in the meantime, and said it had not been pricked

but was strained in the back sinews, and if he (the plaintiff) would allow it to be bled it would be ready for work in a day or two. On the 8th April Proctor violently purged the animal, which in consequence could not stand steady, but trembled violently all over the body. Next day plaintiff spoke to Proctor, and asked him who had given him orders to purge the horse. Proctor replied that he did not know he had done anything wrong. Plaintiff then told him that whenever he required a veterinary surgeon Mr. Thomas Collins was employed by him. On the next day he called Mr. Collins in to examine the horse, and he pronounced the opinion that its life could not be saved. The horse died on the 10th April.

Evidence was then given by Mr. Collins and Mr. S. F. Fallding, M.R.C.V.S., to show that the horse had died from lockjaw, consequent upon the shoeing operation, which had been unskilfully performed, and by which a nail was driven into the sensitive laminae.

For the defence Mr. Proctor was called. He denied that the shoeing had anything to do with the cause of death, and that the animal had died from fracture of the bone of the leg. The man who had shod the horse had been in his employ for twenty years, and he was a skilled person. His Honour asked if it was part of a farrier's duty to give physic. *Defendant*.—Yes. In answer to Mr. Berry, defendant said he purged the horse with aconite and prussic acid, giving it ten degrees of the first, and two doses of the latter.

Isaac Pitsey, blacksmith, in the employ of the defendant, said he had bled and shod the horse in the usual way, and did not prick it to his knowledge. When brought to the stables it stood badly on the off fore foot.

Mr. William Broughton, veterinary surgeon, Leeds, said there was sufficient evidence to show that there had been fracture of the pastern-bone during the life of the horse, and that this had resulted in tetanus or lockjaw and its ultimate death.

Mr. Cuthbert, veterinary surgeon, said he was of opinion that the fracture had taken place after death.

Mr. Carter, veterinary surgeon, said he was inclined to think that the fracture had taken place during life. There was such an amount of inflammation evident on the bone that—no matter what had been done when the horse was being shod—unless there had been a fracture during the life of the horse, it could not have been in such a state. He had no doubt there was sufficient inflammation to account for death. At the suggestion of his Honour the bone (produced) was again cut and examined by Mr. Fallding and Mr. Carter.

The first-named witness stated that there was evidence from the examination which had been made that the fracture had taken place since the death of the horse. The limb was perfectly healthy, and showed no sign of inflammation. Mr. Carter stated that he was still of the same opinion, that the limb had been fractured before death. Mr. Proctor, on being re-called, said that he considered the horse was worth £15 or £16.

Mr. Gane having summed up the case and *Mr. Berry* addressed the jury, *His Honour* also summed up. He said the questions he wished the jury to answer were these:—(1) Was the horse pricked in shoeing? (2) Was the tetanus caused by the pricking? (3) Was the death so caused attributable to want of ordinary care and skill on the part of the defendant or his servant, or either of them.

The jury found that the death of the horse had been caused by pricking, and they were of opinion that sufficient care had not been taken in the treatment of the horse.

His Honour.—That will be a verdict for the plaintiff. What are the damages you award? *The Foreman.*—We consider that £25 is sufficient. *His Honour* gave judgment for that amount, with costs for plaintiff.

PROFESSIONAL DISCREPANCY—ALLEGED CRUELTY CASE AT BURSLEM.

(Before H. C. GREENWOOD and J. EDGE, Esqrs.)

THOMAS CORNS, carter, was summoned for ill-treating a horse, and William Leigh, manufacturer, was summoned for causing the horse to be worked. Mr. Tomkinson appeared for the defence.

Inspector Nicholls said that on the morning of the 26th June he saw the defendant Corns driving a dark-brown horse attached to an empty cart near the Chatterley Wharf. The horse was extremely lame on both fore feet. Corns said he had worked the horse from November to March only three days per week, and he was going to fetch a ton of coals. Witness thought the horse was unfit to draw the empty cart. He had seen Mr. Leigh, who said a side bone had been coming on ever since they had it, and that he was going to sell it to a farmer.

Mr. R. Trigger, veterinary surgeon, gave evidence as to having examined the horse, and gave it as his opinion that the horse was quite unfit for road work, and wanted a long rest, and to be worked on soft ground.

For the defence Mr. Tomkinson called *Mr. George Smith*, veterinary surgeon, Tunstall, who said he saw the horse in question in March last, and it was then suffering from quittor. The horse was brought to his stables, and after treatment the wound was healed, and the horse was sound. He believed now that the horse was better doing light work, and it would not be cruelty to work the horse on the roads in the district.

Mr. William Carless, veterinary surgeon, Stafford, said he had examined the horse, and his condition was as good as need be. He corroborated Mr. Smith's evidence, and said the horse was quite fit to be worked on the roads.

The Stipendiary said he believed that an act of cruelty had been committed on the day named, but it was of a slight degree, and he would dismiss the case on the payment of costs.

CASE OF GLANDERS—CONVICTION.

At Greenwich Police Court, August 19th, John Rowell, livery-stablekeeper, of Stanstead Road, Forest Hill, and Henry Buckingham, marine-store dealer, of Finsbury Place, Hosier Street, Deptford, appeared to summons at the instance of the Metropolitan Board of Works, the first being charged with having a grey gelding suffering from glanders and farcy in his possession and not giving notice to Mr. Ingersoll, the veterinary surgeon appointed inspector under the Act for the district of Lewisham, and the second defendant for driving the animal from Forest Hill to Greenwich, where it was slaughtered.

Mr. Balguy fined Rowell 20s., and 10s. 6d. the veterinary surgeon's charge for attendance, with 2s. cost of summons; and Buckingham 10s. and 2s. costs.

PARLIAMENTARY INTELLIGENCE.

THE OPERATION OF THE CONTAGIOUS DISEASES (ANIMALS) ACTS IN IRELAND.

HOUSE OF LORDS, *Monday, August 11th.*

Lord Emly asked the Lord President whether instructions have been given to the Royal Irish Constabulary to assist in carrying out the provisions of the Contagious Diseases (Animals) Acts.

The Duke of Richmond and Gordon, in reply, said that their lordships would remember that this matter was under discussion some time ago, and there appeared to be some misapprehension as to the course which was adopted in Ireland in respect to carrying out the Act in question. He had been in communication with the Lord-Lieutenant since the discussion took place, and he found that there was every disposition on the part of the Lord-Lieutenant and the Irish Government generally to get the Act as strictly observed in Ireland as in England, and that the police and constabulary fully co-operate in carrying out the Act in the best possible manner.

Lord Emly inquired whether special instructions had been given to the police with reference to carrying out the Act?

The Duke of Richmond and Gordon replied that special instructions had been given, but it was scarcely necessary to do so, the constabulary being bound by law to assist in carrying out the Act.

ARMY APPOINTMENT.

WAR OFFICE, *August 19th.*

VETERINARY DEPARTMENT.—Inspecting Veterinary Surgeon B. Channing Rouse Gardiner is placed on retired pay.

OBITUARY.

WE have been requested to record the death of an aged and retired member of the profession, Mr. John Crump, who died at his residence, The Marsh, Bransford, Worcestershire, on November 6th, 1878, aged eighty-two.

Mr. Crump, shortly after entering the profession, left his native country for America, where he resided for many years; ultimately, however, he returned to England, and took up his residence at Bransford.



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Communications and Cases.

SYNOPSIS OF CONTINENTAL VETERINARY
JOURNALS.

By JOHN HENRY STEEL, Demonstrator of Anatomy at the
Royal Veterinary College.

(Continued from p. 627.)

Summary.—From the *Annales de Médecine Vétérinaire de Bruxelles*, August, 1879.—“Pulmonary Cauterisation by Fine Penetrating Points,” by Prof. Victor Lorge; “Cartilaginous Condition of the Right Auricle,” by M. J. Hugues; “Diphtheria of Birds and its supposed identity with that of Man,” by M. Megnin. From the *Recueil de Médecine Vétérinaire*, 30th July, 1879.—“New Researches on the Nature of the Alterations of the Blood in Typhoid of the Horse,” by M. Salle.

Pulmonary Cauterisation by Fine and Penetrating Points in Domestic Animals, by Professor Victor Lorge, of Brussels. *Summary.*—This surgical method has been recently employed in different affections, especially synovial tumours. The author conceived the idea of passing some incandescent metallic points into the lungs of a dog through the intercostal spaces. This when practised proved so successful that he experimented similarly with the horse, ox, goat, pig, and rabbit. The surgical apparatus comprised the cauteries of M. Leblanc and of Foucher, slightly modified, the first serving for small animals, the second for the horse and the

ox. *Leblanc's cautery* is composed of iron, and the thread-like point, which is detached from the oval-shaped main portion, is about two centimètres long. *Foucher's cautery*, as modified, has a quadrilateral main portion, and a thread-like pointed prolongation, two and a half centimètres in length. In addition, there are required certain protecting or isolating apparatus, which have been devised by M. Mansion (who most ably aided in these investigations). The one for smaller animals is composed of copper, in the shape of a dice-box, with an iron neck and a wooden handle. That for larger animals is more solid, and consists of a circular disk of two iron plates, between which is fixed a layer of wood by rivetting. These plates are centrally pierced by an opening; around the margin of the opening is a copper canula, two centimètres long. This has a neck and handle similar to that for smaller animals. Small animals are operated upon when lying on the side, larger subjects standing against a wall. The anterior convexity of the diaphragm should be reduced as much as possible by previously stinting the patient of food. The operation is performed *in the dog* in the fifth, sixth, or seventh intercostal space, at the superior part of the inferior third; *in the rabbit* in the sixth and seventh spaces, at about the junction of the superior and middle thirds; *in the pig, goat, and ox*, fifth and sixth spaces, at same level as in rabbit; *in the horse*, seventh and eighth spaces, at the middle or inferior third of the region. *Operation.*—(a) In small animals remove the hair and make an incision through the skin, into which introduce the extremity of the “protector;” let this be inclined obliquely from behind forwards. The cautery being at a white heat, introduce it into the protector, and puncture the thoracic walls; it must be passed *obliquely* forwards and downwards to avoid injury of the diaphragm and abdominal viscera. The cautery having remained for some seconds in contact with the pulmonary tissue must be removed in the same direction as it was introduced. Since in the dog and the rabbit the skin is very mobile, a single cutaneous incision serves for several pyro-punctures. (b) In large animals, proceed at first as in operating on small animals; the protector in this case, by means of the attached canula, will protect the whole thickness of the intercostal tissues. The canula of the apparatus having been passed into the subcutaneous cellular tissue, it is necessary to use a special instrument, a kind of trocar (*mandrin*), with a leaf-like blade at one end and a wooden handle at the other. The protector being supported against the wall which is to

be perforated, the operator firmly rests one end of the drill in the palm of the hand, and then, by a sharp movement, pierces the intercostal muscles. He then withdraws the drill, and inserts the canula in the opening which it vacates. After this the same methods and precautions are necessary as with small animals. The author gives a *first series* of experiments, seven in number, on the dog, and these show the complete harmlessness of pulmonary cauterisation with fine penetrating points in that animal. It is rather remarkable that such an operation does not in the least derange the respiratory functions. In each case the wounds in the lungs healed perfectly, without any apparent symptom of pneumonia or pleuritis. *Second series* comprised experiments on five rabbits. Since the apparatus used for the dog was somewhat too large for these subjects, puncture was made directly perpendicular to the costal surface; hence the diaphragm and abdominal viscera were involved, but in no case did serious results occur. A goat was experimented upon with similar results. A two-year old colt was operated upon, and destroyed ten days after. "The two pleural sacs contained a considerable quantity of yellow turbid serosity; the visceral pleuræ at the posterior half of the external surface of the lung were covered with a fibrinous layer, which could be easily detached as a false membrane of some thickness. Notable thickening of the pleura pulmonalis, with thickening and infiltration of its subserous layer, was observed. The pulmonary wounds were obliterated by a fibrinous exudate, and the pleura costalis presented soft deposits, which could be easily torn. Thus, the effects of the operation in the horse are entirely different from those in the animals alluded to; for, to judge by this experiment, the operation causes sufficient disturbance to endanger the patient's life." But this is probably the result of the specific organisation of the horse. No constitutional or respiratory disturbance followed the operation in the case of an ox and a pig. Nor were the lesions marked when the viscera involved were examined *post-mortem*. Professor Lorge arrives at the following conclusions:

1st. "That pulmonary cauterisation with fine penetrating points is harmless in the ox, goat, pig, dog, and rabbit; that in these animals it never leaves the least trace of hæmorrhage into the pleural sac, nor of pleurisy, nor of pneumonia (to any appreciable extent).

2. "That the pulmonary wounds produced by fine incandescent points heal with rapidity, and do not produce pneumonia.

3. "That true pulmonary cauterisation *in the horse* leads to well-marked plastic pneumonia and pleurisy."

"It remains to ascertain whether this operation is of any therapeutic value. The preceding experiments ought to encourage us to make some attempts in this line in most of our domestic animals. Perhaps it will be useful in some forms of pneumonia and pulmonary tuberculosis. This must be proved by more experiments."

Cartilaginous change of the Right Auricle of the Heart, a condition serving to assist in the elucidation of a physiological point, and suggesting a question of pathogenesis. By M. J. Hugues, Military Veterinarian (1st. class), extracted from *Journal de la Société Royale des Sciences Naturelles et Médicales*, of which the author is a corresponding member. The auricles are said to *drive* the blood into the ventricles, but we incline to consider them wholly passive, merely dilations or mouths of the venous canals. The thinness of their walls and the feebleness of their contractions show this, and the opinion is confirmed by the results of examination in living animals; but we have no better proof of the uselessness of the auricles as active organs than the lesion which is above named affords us. These remarks were elicited by a case which came under the author's notice in which a horse succumbed to complicated internal disorder, and, on *post-mortem* examination, it was found that the heart was increased in size, especially on the right side of the auricular mass, where it was hard, yielding but little to pressure by the hand; the right auricle being completely cartilaginous, composed of three cartilaginous pieces united together by a sort of fibro-serous ligament. "The largest part continued the curvature of the ventricle, being of an elliptical form, with outer face convex, inner concave; longest diameter, 14 centimètres; shortest, 9; thickness, $2\frac{1}{2}$ centimètres at the centre; diminishing towards the borders to 7-8 mm., or even less. The next largest portion, meeting the preceding by its posterior margin, irregularly, was angular, and measured 7 centimètres by 4. Its thickness was almost everywhere the same, 7-8 mm. The third piece, situated in front, was a small parallelogram of the same thickness as the last. These pieces were of an essentially cartilaginous structure, with difficulty divisible by the knife, and wholly devoid of muscular fibres." "Our bibliographical researches have revealed to us only three such cases, two related in France and one in England, in each the *right* auricle was the part effected. Are we to infer that this is less indispensable than the left?" "From a patho-

genic point of view, what share in the production of the conditions which brought about death must we attribute to this anomaly? We believe not the least! Indeed, everything tends to show us that this lesion or anomaly is perfectly compatible with the due performance of the functions of the body. Have we not said that the horse was well developed, that it was very muscular, and in good condition? Does not this prove that the animal was in good health and had never probably been seriously ill? But the abnormal structure, the invading cartilage, could not form in a few days; it could acquire its dimensions and supplant the muscular structure only little by little. Perhaps the time of the change belonged to the fœtal stage." (Summary.)

On Diphtheria of Birds and its supposed identity with that of Man, by M. Megnin.

"Dr. Nicati, of Marseilles, has communicated to the Academy of Sciences and to the Society of Public Medicine and of Professional Hygiène, a note on "*A possible means of propagation of diphtheria*," in which the author, relying on a coincidence which he has observed between the appearance of diphtheria of the fowl and that of the human species, and the similarity between the clinical records in each case, also communicability by means of inoculation with false membranes of the first named disease to other birds and to the rabbit, arrives at the conclusion that identity of the two diseases is probable, and suggests adoption of the following measures: (1) To prescribe a rigid inspection of poultry when brought into the town. (2) To trace out the sources of the affection in order to eradicate them. M. Nicati seems to know the diphtheria of fowls only by the account which M. Dupont has given of an epizootic which raged in Gironde in 1854-5, and by the facts which have been communicated to him by M. Gavard, V.S., of Marseilles. The disease, which is very common, has, however, been carefully studied by many authors, especially by *M. Ercolani* at Turin, in 1861; by *MM. Tripier & Arloing*, in 1872; by *Dr. Pietra Piana* at Bologna, in 1876, and also by myself last year. It is known to breeders under the names *Quinsey*, *Chancre*, &c., and presents two forms, generally in the same patient simultaneously: 1st. A false membranous form characterised by deposits of a more or less deep yellowish-white colour, which are found investing one or more of the following organs: tongue, pharynx, nasal chambers, larynx, crop, intestines, and air-passages. 2ndly. A tuberculous form marked by the production of caseous and granular yellow spherical masses in parenchymatous organs as areolar tissue, the intestinal

walls, the orbits, and under the skin. These tubercles have exactly the same structure as the false membranes. I have consequently, in my *mémoire* on the subject, termed the disease *Tuberculo-diphtheria*. This disease affects alike all species of birds. During the two years 1876 and '77 I have found it—

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| 19 | times in | pigeons (both native and foreign). |
| 17 | „ | fowls. |
| 5 | „ | Californian colins. |
| 7 | „ | red and green partridges. |
| 2 | „ | turkeys and speckled hens. |
| 5 | „ | common pheasants. |
| 18 | „ | rarer forms of pheasants (silver, &c.). |
| 2 | „ | tragopans. |
| 15 | „ | native and foreign sparrows. |
| 4 | „ | parrots. |
| 7 | „ | geese (common), or rare (as Carolinas, Mandarins, &c.). |

It is very contagious among birds; also when a poultry-yard, cage, pigeon-house, or other aviary is invaded, all the inhabitants, with rare exceptions, are one after another affected, and those only recover in which it remains localised in the tongue (being the true “pip”), in the pharynx, or in the subcutaneous areolar tissue. Removal of the false membranes, followed by cauterisation with nitrate of silver, or by honey acidified with hydrochloric acid, in the first case, or incision through the skin and removal of the tumour, in the last case, suffices to bring about a cure. The pathological anatomy of this affection has been carefully worked out both in Italy and in France, and always the determining cause has been found to be a simple living organism, which is met with under the false membranes or at the surface of the tubercles in the outer layers of the tissues to which the exudate adheres. This organism, which *MM. Arloing* and *Tripier* (who have only studied the tuberculous form affecting the liver of fowls) have recognised as a *gregarina*, on the conclusions of *M. Balbiani*, to whom these observers submitted it, has been classed among *Psorospermia* by *Dr. Pietra Piana*, who gives very exact figures of it in the plate which accompanies his memoir. It occurs under two forms: as sporule-like corpuscles grouped in a loose heap, or enclosed in a spherical sac (psorosperms); or as egg-shaped corpuscles with a resisting envelope, which open at their extremity, and contain a granular matter, which undergo segmentation, and produce sporule-like sacs of the first form. The same proto-organisms are met with in tubercles of the liver of the rabbit—a disease exactly corresponding to tuberculo-diphtheria of birds when it is localised in the liver, and

quite as frequent among rodents as the latter disease among fowls. This much being known, the question of identity of diphtheria of birds and of men which M. Nicati implies is easy of solution. In the numerous examinations which have been made of the pathological anatomy of diphtheria of man has the parasite which produces and propagates diphtheria in birds been found? I do not know of any instance. But there are other arguments against the identity of the affections. I know many farms, poultry yards, and dove cots, which have been depopulated by tuberculo-diphtheria, where, nevertheless, diphtheria of man has never occurred. For three years I have made more than 200 autopsies of birds of many kinds affected with diphtheria without taking any special precautions, and though the house where my laboratory is is inhabited by many children, no outbreak of diphtheria has occurred there. All the diphtheritic fowls which I have opened have been carefully brought to me by a rag-and-bone woman of my acquaintance, who has eaten them constantly at home, but neither she nor any of her family have been ever affected with diphtheria."—(*Tribune Médicale*.)

In reference to this we read in the *Progrès Médicale* that M. Trasbot, Clinical Professor at the Alfort Veterinary School, has made some fresh experiments concerning diphtheria of birds. He has ineffectually attempted to convey it to the dog by inoculation. The pig proved equally refractory. Only inoculation of fowl from fowl succeeded. To prove the non-communicability of diphtheria of birds to man, a pupil of M. Trasbot placed in his throat false membrane from the fowl, and did not become affected. M. Trasbot, therefore, believes that the fears of M. Nicati are groundless.—(*Archives Médicales Belges*.)

We have frequently expressed our interest in the pathology of birds, and hope the above will be acceptable to our readers. The name of the student in question surely is worthy of record. We find it in the September number of the *Veterinary Journal*; M. Faiès thus exhibited his zeal for the advancement of medicine.

New Researches on the Nature of the Alterations of the Blood in Typhoid Affections of the Horse, by M. Salle.—This able memoir was read before the Société Centrale de Médecine Vétérinaire, at the sitting of 10th July, by the author, who is a corresponding member of the society. He had received a prize for an essay on the subject in the year 1870, and therefore handled it as an authority. He resolved to study (by methods pointed out by M. H. Bouley in 1872)

the blood of horses affected with typhoid, in order to solve, by observation, experiments and analysis, questions which would enable veterinarians dealing with the subject of the alterations of the blood in typhoid to determine their probable causes, and the hygienic and therapeutic means which ought to be opposed to them. He submitted the results of this investigation to the Academy of Sciences, and it was there honoured by a public acknowledgment (*citation*) at the sitting of June 25th, 1875. Among other alterations which occur in the blood *during life*, is especially diminution of fibrin, and *after death* acidity of the blood, which, however, sometimes is neutral and sometimes alkaline.

Microscopical Examination.—Different crystals have been observed in the blood of animals affected with *true* typhoid affections. M. Signol first pointed out this, but when the matter came before the Société Centrale in 1873, a strong party, headed by M. Megnin, opposed this. "These remarkable crystals are absolutely of no importance; they are only a *post-mortem* effect. No crystals occur if the blood is kept below zero, for that, according to M. Pasteur, would ensure absence of putrefactive influence; these crystals are not constantly present, but quite exceptional," &c. In 1873 and 1874 I found by experiment (1) that, whatever the time of year, whether the temperature was above or below zero, the *presence of crystals* is constant; (2) whatever interval has elapsed between death and the autopsy the blood contains crystals (even one hour only); (3) the method followed in collecting specimens of the blood showed that the crystals occupy different veins in different cases—most frequently the portal and subhepatic veins. In each case blood from twelve different veins was examined. From January to December observations of typhoid blood from horses were paralleled by similar researches with blood of dogs and horses, dead by other means; but the blood of the latter animals, "*whatever the temperature*, contains crystals if the autopsy be made from ten to twelve hours after death, but none are apparent if it be made before ten hours." In typhoid blood, on the contrary, almost invariably crystals may be observed, whatever time has elapsed since death. This proof indicates that the alteration which normal blood undergoes, in being converted into typhoid, is similar to that which it undergoes from the dissolving action of cadaveric fermentation during at least twelve hours. Experiments seemed to show that cold rather retards than hastens formation of blood crystals.

Chemical analysis shows diminution of blood globules,

presence of crystals, and neutral or acid reaction. The acid or neutral reaction of the typhoid plasma serves to explain the reason of the black or violet colour of the blood, which in consequence is surcharged with carbonic acid. The crystals of typhoid blood were proved to contain iron, and, therefore, consist of hæmoglobin, set free by solution of the red corpuscles. Thus, such blood, in consequence of its neutral or acid character, has diminished power of solution of carbolic acid, and also an agent other than oxygen circulates in the plasma, destroys the hæmoglobin, and thus impedes elimination of carbonic anhydride and blood changes. The blood of a healthy horse defibrinated and subjected to the action of ether has the same physical, chemical, and microscopical characters as typhoid blood. Its colouring matter is set free by dissolution of the red globules, and crystallises either in laminated crystals of various geometrical forms or in rod-shaped bodies, arranged in a stellate manner, resembling in form those found in typhoid blood. We may conclude that in typhoid blood there is a considerable diminution of fibrine and of globules. When bile is added to blood, or injected into the veins of a living animal, it causes alteration in the blood similar to those resulting from typhoid. Typhoid serum was submitted to a competent chemist, who reported, "The serum was remarkable for its viscid consistence and its markedly yellow-greenish colour. Treated with nitric acid, it gives a bluish-grey coagulum. Concentrated sulphuric acid gave *an indigo-blue coagulum*, forming a bluish-green solution in excess of the acid. Nitric acid added to this gives a purple-reddish colour. The predominance of blue or green colour in the solution depends on the amount of acid employed. The serum, when agitated with chloroform or ether coagulates without giving up its colouring matter to these solvents." All this tends to show that the serum contains one of the most important of the colouring matters of the bile—biliverdin. Injection into the veins of water vapour collected in stables destroyed a mule in less than eight days, and autopsy, including microscopical examination of the blood, disclosed such lesions and alterations as occurred in the six horses typhoid-affected which occupied the stable from which the vapour was procured. The liquid injected acted like bile in dissolving the plasma. Water collected similarly from the stables of healthy horses in three cases gave negative results.

M. Delafond and *Professor Bassi*, of *Turin Veterinary School*, have pointed out certain staff-like bodies which are, in the authors' opinion, only fragments resulting from break-

ing up of the blood crystals when subjected to pressure under a covering glass ; for similar bodies may be artificially produced in this way. These staff-like bodies are the first stage of crystallisation, the rod-like tabular bodies being advanced stages of the process. This may be easily verified by studying crystallisation of hæmoglobin, as caused artificially by ether. That study will show us (1) that crystallisation is visible only when the current of the liquid is arrested between the two layers of glass, which shows why we cannot observe crystals during life in the blood ; (2) that in a number of preparations successively examined we cannot always note crystals, perhaps in many cases for want of the requisite essentials ; (3) that the number of crystals results from and is in inverse ratio to the number of red globules broken up, for the longer the specimen of blood treated with ether stands the more numerous are the crystals. In this way we can explain why it is that none are to be found in the blood in a benign case of typhoid, few in a more serious case, a very large number in a rapid and highly acute attack ; (4) that when putrefaction commences the crystals disappear. " I affirm that in no one case have I ever observed Bacteria, properly so called, either during life or after death. I have inoculated many horses with the blood in as altered a condition as possible, and directly after its removal from the body of the typhoid animal, and have never thereby communicated the disease. Hence, we may decide that there is not the slightest resemblance, nor analogy even, between charbon and typhoid affections. These diseases are infectious, since steam collected from the stables of typhoid horses produced the disease when introduced into the circulating blood of living animals." *Etiology.*—Infection generally among young horses ; also conditions leading to textural changes in the liver (a cause which requires proof and explanation) ; excessive and prolonged work, &c. M. Bouley suggested that creatin might be in excess in the blood in such cases, but this has not been investigated, though some facts seem to confirm this. Thus, an animal completely exhausted from overwork died, and on microscopical examination the blood was found to present true typhoid characters. Again, " twenty years ago I pointed out the fatal effects of transporting some remounts by rail 200 leagues without sufficient shelter against the cold wind and weather, also subjected for forty hours to that cramped position which is instinctively adopted to lessen the shocks, jolting, &c., of a moving train. During the war in Italy my regiment (1st Artillery) was at Grenoble, our horses came direct from the remount establishment of Bec-

Helloin, and without being able to exactly determine the cause of the fearful mortality which decimated the troop-horses, I was astonished by the losses, since more than a third of the horses which died did so on the very day of their arrival at the regiment. And, mark you, I had a formal assurance from my colleague at the depôt that all the horses were bought and delivered in good health." These effects are so well known in the army as to have led to a ministerial decree commanding further protection of horses of the remount making long journeys by rail. *Therapeutic indications for typhoid cases*:—(1) Purge every young horse immediately on its arrival; (2) also give cooling agents and diuretics. (3) Isolate all sick horses from healthy ones to avoid infection. (4) Give a good free supply of fresh air; (5) Applications of mustard to the chest and limbs to arouse the enfeebled forces of the economy. (6) Frequent groomings. (7) Iron and bitter tonics, electuaries, with alcoholic basis. (8) Liberal supply of choice and varied food. (9) Neither bleeding nor setons. (10) During convalescence, redouble the local and general hygienic measures; feed neither sparingly nor profusely, feed often and give but little at a time; watch carefully against a relapse.

Conclusions.—"Typhoid affections of the horse are caused by the introduction into the economy of an agent which acts especially on the plasma of the blood—(1) By altering its albumen; (2) by diminishing the quantity and coagulability of the fibrin; (3) by dissolving the red globules. These affections are *infectious* and not *contagious*."

CAMELS IN CONNECTION WITH THE SOUTH AFGHAN EXPEDITION, 1878—1879.

By CHARLES STEEL, Veterinary Surgeon, 16th Lancers,
employed on Special Service.

HAVING received an intimation from the Council of the United Service Institution of India that a paper on camels would be desirable for their journal, I am induced to bring forward the results of my observations on the habits, treatment, diseases, &c., of that animal during my service in the recent expedition to South Afghanistan, and propose that my observations shall be of a character essentially practical, introducing only such technicalities as are un-

avoidable in the elucidation of my subjects, and even then such as shall be made clearly intelligible to the reader.

Perhaps on no previous occasion has there been so ample a field for gleaning information relative to the camel as used for transport purposes. The enormous losses, as a matter of course, attracted my notice, and even had I then been indifferent, the appeal to my olfactory senses at almost every step of the distance from Jacobabad to Candahar would have been irresistible. Had I been deficient in ordinary observation, and denied by nature the most useful sense of smell, the emotion of pity must have stimulated my inquiries as to whether my professional training could not devise some means of investigating the subject, and bringing forward suggestions which might relieve the poor animals from the effects of ill treatment, the result of inexperience in their management, and the most revolting cruelties practised upon them by inhuman attendants.

My remarks are founded upon notes made during many a long hour's trudge through the Kutchee desert, the Bolan Pass, the Kojuk; over the different plains en route to Candahar; the many times slippery passage of the Bori Valley, interspersed with those nullahs so well known as impeding camel progress; the difficult passes through the chains of mountains on the road back from Kush del Khan Ka Killa to the Indus; many times calculating the distance travelled by counting the number of paces taken by the animal during an hour; seeing camels under almost the extremes of temperature; with deficiency and uncertain quality of forage when there was frequently dearth; and, at times, almost poisonous condition of water.

My subject comes under so many heads that perhaps it would be better to introduce it in separate paragraphs, rather than to attempt any preliminary adjustment to be carried out by arrangement; these, for the convenience of consideration, shall be kept as distinct as possible, so that, if a reader is particularly interested in any one branch, he may not be embarrassed by collateral matter.

General Characteristics of Camel.

The camel may fairly be included under the head of domesticated animals, for seldom is he found in a wild state. So patient and docile is he in our service, so tolerant of abstinence on an emergency, by his arched spine (the hump is not here alluded to) and flat sides so well adapted for the imposition of loads, and by his elastic, cushion-like feet to traverse loose, sandy ground, that but little observation or

reasoning is required to recognise him as a beast of burden especially designed for certain localities, and to stamp him as the "ship of the desert." It will be seen, as we proceed, how far he is capable of serving us when under different conditions. With the general appearance of the camel all are familiar; the long neck, prodigious hump, gawky legs, and patient expression of countenance, with a really beautiful prominent eye, are remarkable; the very great disparity in muscular development between the fore and hind limbs, to the disadvantage of the latter, claims especial notice, and, as may be anticipated, anatomists find that the hind quarters are equally deficient in nervous supply; to this want of power behind we trace the inadaptability of the animal for climbing hills, and who has ever seen the camel attempt more than the very mildest jump? It would appear that the male is unable to support himself on his two hind legs even during sexual connection, for this office is performed in a semi-recumbent position. Camels are ruminants, but exceptional ones, and may be classed between Ruminantia and Pachydermata. As readily recognisable instances of their differing from ordinary ruminants, the facts of their having two incisor teeth in the upper jaw, the possession of canine teeth both in upper and lower, and the presence of two pre-molars in upper and two in lower may be here mentioned, and other deviations will be subsequently noticed. The wedge-shaped teeth of the lower jaw are evidently adapted for browsing on shrubby plants, and their dental arrangement altogether indicates that they are *naturally wholly herbivorous*. The senses of sight and smell are very acute; here the prominent eye comes into play, and by the care with which the selection of such food as camel-thorn, pipgal, burgot, &c., is made, and mudar, ganjha, euphorbium, &c., are rejected, we observe that delicate appreciation of wholesome diet by means of the olfactory powers which strongly argues against the probability of camels voluntarily eating poisonous herbs, as was suspected by some when the mortality was so great at Quetta; indeed, an intelligent Serwan whom I consulted as to the possibility of a poisonous plant called "ateri" being accidentally consumed, informed me that it was an absolute fact that it, and such plants, were carefully avoided; he admitted this plant being given medicinally, combined with salt, in cases of flatulence. The cloven foot is usually a characteristic of ruminants, but in the camel there is a very different pedal arrangement. We certainly observe two short toes with separate hoofs, but these more nearly resemble toenails; the feet are resting upon elastic pads or cushions

under the toes, united by a common sole, and forming, as above mentioned, an extended pad suitable, apparently, for the road on which he is most at home, viz. the sandy plain; the sole, however, is very thick, and the whole cushion so accommodating that, in spite of the presumed adaptability to sand, I must admit it is very tolerant of even rough roads, and that lameness from injured feet on such irregular, rocky ground as in the Bolan Pass and other places was of unfrequent occurrence. The hump is presumed to be a provision of nature for endurance of long abstinence; a quantity of fatty matter enters into its composition, and the Arab is said to be very careful in looking to its condition before commencing a long journey. From my own observation I cannot recommend too great a reliance upon this store of nutriment, as I fear that the camel is given credit for a greater tolerance of abstinence than he really possesses, for, if not absolutely starved, it will not be difficult to show that there are very fatal secondary results from want of nutrition; and here it may be appropriately mentioned that the store of water the animal is supposed to be capable of carrying is much exaggerated. My experienced Serwan (a somewhat aged man, who had been with camels all his life) told me that, in hot weather, camels required watering every day; in cold they began to fail when without it for three days, and if denied for five days they would die; but this latter subject will receive attention in another part of my paper. The callosities on the stifles, elbows, and beneath the breast are very characteristic, and the wisdom of such provision is evident when they are crouching for the imposition of their load; the one beneath the breast is called "Rahafay," and a severe bruise sometimes occurs to its substructure, resulting in sinuous, unhealthy wounds difficult to cure, causing much inconvenience to the animal and consequent loss of condition; but this was *not* a frequent cause of inability amongst the transport camels of the South Afghan expedition. The long eyelashes may be observed as evident sentinels to give notice of the approach of the numerous offending agents so prevalent in hot climates, and the power of closing the nostrils at will is a provision against the intrusion of irritating substances into the delicately lined respiratory passages. "The mouth seems formed to save for the animal every drop of the fluid excretions of the nose; a channel leads from each nostril to the mid-fissure dividing the upper lip, which is continued down into the mouth" (Owen). All observers must be struck by the protrusion at times of a peculiar membranous kind of bag from the mouth of camels, accompanied by a gurgling

sound. This bag is called by native attendants the Palu ; it usually makes its appearance when the animal is at " must " (or rutting), is not visible until the fifth, or year of puberty ; is never seen, although existent, in females, and always shows itself on one particular side ; the popular and even suggestive idea is that it provides means of refreshment by bringing water into the mouth and fauces, but a most careful *post-mortem* examination made by me failed to detect any duct by which water could enter from the œsophagus. Professor Owen, however, suggests that " its surface shows the pores of innumerable mucous crypts, and in the ordinary state, in both sexes, the flap may apply its own secretion, and water regurgitated from the storage cells of the stomach to the extended surface of the pharynx and root of the tongue, so as to allay the feeling of thirst." He anatomically describes it as " a broad pendulous flap hanging down from the fore part of the soft palate and usually resting upon the dorsum of the tongue," and adds, " in the rutting male the palatal flap is greatly enlarged. I have found it extending ten inches down the pharynx, passing below the margin of the soft palate and the opening of the larynx into the œsophagus."

I am unable to find any record of a phenomenon frequently observed by me during trying marches, and some friends of camel experience, whom I have consulted, do not appear to have noticed it, viz. that of an oozing of red-coloured fluid from some orifice about two inches below the root of the ear. The fluid would appear to be perspiration tinged with colouring matter ; it is only distilled drop by drop during extreme distress, and usually precedes the falling from exhaustion ; it painfully suggested the idea of the poor animals *sweating drops of blood* when cruelly urged beyond their powers of endurance. In further noticing the general characteristics of the camel it may be remarked that, during progression, both feet on one side are simultaneously moved, giving the peculiar motion familiar to those who have ridden the animal ; that it sometimes lives from thirty to forty years ; and that its utility is not confined to its services as a means of transport, for it supplies wholesome flesh and milk as articles of food. As an instance of the appreciation of the nutritive value of camels' milk it is known that Arabs, Persians, Afghans, and Punjaubees, frequently resort to it as especially nourishing for foals, as it produces greater stamina than the milk of any other animal ; chemical analysis proves it closely allied to mares' milk in its constitution.

Breeds.—With regard to breeds of camels in India, the

variety does not appear to be extensive. Rajpootana supplies a great many, and from that district were derived those which were used during the siege of Delhi. Our camels in South Afghanistan were almost all Scind, amongst which was a very small proportion of females; whereas with the northern army they are reported to have abounded. We had a small number of Paharee or hill camels, and a few specimens of the magnificent Persian. Some from Scind were very fine and powerful, distinguished by their height, length of leg, and paucity of hair, amounting, in some instances to nudity, the disproportion in strength of fore and hind extremities being very remarkable, and their susceptibility to climatic changes very great. The Paharee is much more freely supplied with hair, of lower stature as a rule, shorter in the leg, and more proportionate development posteriorly; these certainly suffered much less from any cause, and I had no opportunity of making a *post-mortem* examination. The Persian possesses a thick coat, splendid capillary appendages, especially about the neck, which has a deep and graceful curve; he has also a wide chest and short legs, but I was sorry to observe that, as the climate increased in temperature, the ornamental hair began to fall off in patches, presenting a mangy appearance; this would probably be restored on the return of cold weather. There were only a few specimens, bought by officers above Candahar as curiosities, so that there was little opportunity of judging as to their qualifications for transport. It is stated that a fossil species, much larger than the ordinary camel, has been discovered in the tertiary deposits in the Sewalik hills.

Anatomical construction, so far as it is especially adapted to the present subject.—My remarks under this head must be mainly upon the anatomy of the respiratory, circulatory, and digestive apparatus. As this is not an anatomical essay, a mere outline or elementary notice will sufficiently prepare the reader for appreciation of the practical, physiological, and pathological deductions which are to follow. The power of closing the nostrils at will has been alluded to; the air next passes through the nasal chambers to the larynx, which is a cartilaginous box, composed of five elastic pieces, the most remarkable of which is the epiglottis or lid, which closes the opening during deglutition, preventing the ingress of food which would prove violently irritating to its delicate lining membrane. The whole apparatus is concerned in the modulations of voice, and in the animal under consideration there are some few peculiarities of formation, but they have no especial bearing on the subject. Attached to the larynx is

the trachea or windpipe, consisting of a number of cartilaginous rings, lined by a continuation of the membrane of the larynx, the most remarkable peculiarity in the camel being the number of pieces, the natural consequence of length of neck. This windpipe, on reaching the chest, bifurcates, one branch going to each lung; each branch is again divided and subdivided, until it gradually loses its cartilaginous character, and becomes membranous only; these are called the bronchial tubes, and ultimately end in cells composed of so attenuated membrane that the air conveyed to them comes into such close approximation to ramifications of blood-vessels surrounding them that, by a process called endosmose and exosmose, an interchange of gases takes place, and the object of respiration is attained, viz. the oxygenation of the blood, by which it is endowed with its vivifying principle, and the partial deprivation of the same fluid. The lungs, then, are spongy bodies composed of air-tubes and cells, blood-vessels, and a tissue, which connects the parts together; they are divided into two—right and left—which are subdivided into lobes, the peculiarity of those of the camel being that this latter division is less marked than in most mammalia. The lungs are covered with a fine membrane of a serous nature, called pleura, which is also reflected upon the inside of the chest, the secretion from which performs the office of lubrication, and by its means any attrition during the motions of inspiration and expiration is avoided.

The consideration of the pneumonic apparatus would be incomplete without a glance at the circulatory. The blood being oxygenated as above described, and become of a scarlet colour, is carried by veins to the left side of the heart, and passing through two of the cavities of that organ, is pumped through an artery (the aorta), which immediately divides, and is there split up into arteries, which are distributed in infinitesimal divisions to every part of the body, terminating in fine tubes resembling those which ramify on the air cells, where a similar interchange takes place, which is reparative, there being a deposit of new material and a removal of the effete; the worn-out matter now tinges the blood with a deep red colour, it is taken up by the minute veins, which, by combining, increase in size and diminish in number until they terminate in the two main ones (anterior and posterior venæ cavæ), which enter the right side of the heart; the blood is pumped through the two divisions of that viscus into the artery going to the lungs (the pulmonary), on reaching which, it is again distributed by ramifi-

cations on the air cells, and the circulation is complete. The digestive organs of the camel, as in all ruminants, are complicated, but I will endeavour to give a familiar outline of them. The food being gathered is rolled about by the tongue and masticated to a certain extent by the larger set of teeth (the molars), during the process being mixed with a proportion of saliva, and the fluid secreted from the lining membrane of the mouth itself called mucus, it is then thrown into the pouch at the top of the gullet, named the pharynx, and from thence propelled down the gullet or œsophagus into the rumen or first stomach, which is a large store for food at this stage of its passage. The rumen is a musculo-membranous bag occupying a very large portion of the abdomen; it is divided into four compartments internally, and is lined by a continuation of the membrane covering the mouth and inside of the gullet, but modified in character. The remarkable peculiarity of this stomach in the camel which I wish to describe is that appended to it are pouches arranged in two groups, right and left, the right being the larger, and each group disposed in parallel rows separated by strong muscular bundles, given off from a large band of fibres, which commence at the entrance extremity of the rumen, and proceed in a longitudinal direction, dividing the entire cavity into two compartments. Muscular bundles of fibres are arranged transversely, and are otherwise distributed, so as, when contracting, to *close* the square-shaped mouths of the pouches. This arrangement, all comparative physiologists agree, is a provision for the especial stowage of water, enabling the camel above all animals to tolerate on an *emergency* an abstinence from that fluid; but let the word *emergency* be remarked, for it has been mentioned that, although the animal is thus enabled to travel on a short supply, it does not follow that he is not better with his tanks frequently replenished; this interesting provision has been made much stock of by lecturers, and I am afraid in their enthusiasm erroneous impressions have been conveyed; for instance, I recollect one who said that when he found the camel to possess *two extra stomachs* for the conveyance of water, the object of which was to supply him with refreshment during his passage through the desert, he could not help ejaculating how wonderful! and he went on to enlarge greatly upon the jealousy with which the supply was drawn upon, conveying the idea that it was only when the animal arrived at an extremity that these stomachs were opened, and, even then but just sufficient quantity of water exuded to moisten the parched palate, for fear the store

should be too soon exhausted. True, these water pouches may be called extra stomachs, but they are not large reservoirs; it is equally true that their muscular mouths prevent lavish expenditure, but we must not, in our enthusiastic admiration of nature's provisions, run away with the idea that camels are absolutely independent of frequent watering; it is a dangerous doctrine to adopt on a campaign, where we want by every means to economise the animal's strength, and draw as little as possible upon this reserve. But to return to the ordinary course of the food: the rumen being filled with partially masticated food the animal usually lies down, experiences a sense of repletion, and the contents being rolled about and mixed with the fluid contained, are prepared to be passed into the second stomach (reticulum or honeycomb shaped), where pellet after pellet is separated and forced up the gullet into the mouth, this time to be more effectually masticated; this process is called "chewing the cud," and in the camel the food is ground *alternately* in opposite directions from side to side; in other ruminants this is not done so regularly. After still further admixture with saliva, the importance of which fluid is too often overlooked, it again passes down the gullet, but in such a pulpy state as to glide along a passage to the third stomach, and pass by the entrances into the first and second. The third stomach is called the omasum or manyplies, and has numbers of broad folds of lining membrane, resembling leaves of a book, which are covered with numerous prominences or papillæ; between these the pabulum undergoes still further trituration and mucous admixture, and is then forced into the fourth stomach or abomasum, which is lined by a velvet-like membrane here it meets with the gastric fluid, usually looked upon as the most active agent in digestion; it then passes on to the first small intestine (duodenum), the commencement of which forms a distinct pouch in the camel, where it is subjected to the action of yet two more juices (bile from the liver, and the pancreatic secretion); here the aliment becomes fit for the separation of the blood material, which is taken up to certain glands, and conveyed into the circulation by means of a set of conduits named lacteals, from the milk-like appearance of the fluid contained. The remaining mass is passed on through the small and large intestines, during which passage still further nutritious matter is selected from it, until ultimately superfluities are expelled in the form of excrement, this being in the camel particularly rich in ammonia, as proved by sal ammoniac being prepared from it. There are peculiarities in the anatomy of the liver, and

some few specialties in the form of the pancreas, but it will be sufficient for our purpose to notice the *absence of the gall-bladder* as an appendix to the former; this proves that, as in the horse, a continuous flow of bile is intended, and we consequently infer that digestion in both animals is a continuous, and not an intermittent process, as is more or less the case with those that possess gall-bladders. The horse thrives best when fed frequently in small quantities, why should not the camel be similarly treated? It is at the same time admitted that both *will* tolerate fasting for a considerable period, and the existence of the rumen in camels is not forgotten. The kidneys are glandular bodies situated in the abdomen under the loins; they perform an excreting office, and it is to be particularly remarked that the urine of the camel corresponds with the dung in being rich in ammonia. The skin of the camel has been observed by my friend, Mr. Kettlewell (V.S., Saharumpore Stud), when placed under the microscope, to be deficient in perspiratory follicles and ducts. One more anatomical provision remains to be noticed as pertinent to my subject, viz. the nervous distribution which maintains the sympathy of internal organs, and renders their action dependent on each other; this arrangement cannot be enlarged upon here, but my readers will please to remember there is what is called the pneumo-gastric system, which, as its name indicates, *connects intimately the respiratory and digestive functions*.

Evils on march.—Most of these admit of palliation, but it will be at first sight supposed that the *nature of the road* in a strange country is irremediable; there are many instances, however, in which considerable saving to animal power may be effected, by judiciously regulating the length of march according to the severity or otherwise of the ground traversed, and to effect this I do not think the importance of hills as impedimenta to camel progress can be over-estimated. Camels will travel over loose shingle with comparative impunity, but the base of every acclivity in the Candahar route bears, doubtless to this day, abundant testimony as to the trying nature of rising ground. I remember many instances of loss of life by neglect of this precaution when camping ground could have been easily arranged; notably in a march from Much to Darwaza in the Bolan Pass, where scores of beasts succumbed at the foot of the final hill, whereas a rest at Sir and Bolan might have husbanded their strength sufficiently to have enabled them to have surmounted the obstacle, after which it was com-

parative plain sailing to Quetta, where a day or two's rest might have revived the jaded. Another very trying road is the slippery one. The camel is especially afraid of such, and his anxiety proportionately increases the amount of exertion, especially when wet nullahs are met with, and many is the one that ended his life's journey at these. Irregular, insufficient, and unsuitable food, I maintain to have been a fruitful source of loss which might have been avoided, but this will be considered under the head of "Methods of obviating Diseases." Perseverance when the animal was obviously unfit for further exertion was a crying evil. I saw camels loaded *standing* day after day, because they were unable from weakness to rise if the burden was imposed when they were lying down in the usual manner, the consequence in one instance being that the poor brute, literally worked to death, joined the melancholy party of corpses at the foot of the hill just alluded to; this *inability* was esteemed obstinacy by the Serwan, the stick was freely used, and in the one instance my knife was borrowed to cut a fresh slit in the nostril for insertion of the leading cord, in order that, by such torture, the victim might be induced to travel a mile or two further; I little knew for what purpose the instrument was required. Suffering from weather undoubtedly added to the list of casualties, and was in many instances an unavoidable cause. At Abdulla Khan Ka Killa, camels laid for forty-eight hours in melting snow amounting to a freezing mixture. No wonder at the stagnation of blood which produced congestion of the lungs and its consequences. I suggested that they should be compelled to move about in order to restore circulation, but the Serwans could not be induced to make the necessary exertion which would, in all probability, have been equally beneficial to themselves; indeed the cruelty and neglect of these persons cannot be exaggerated. Too indifferent were they frequently even to procure food for their charge, unless it was absolutely brought to them. It was the general impression amongst officers of the expedition that this indifference in a great measure arose from the idea of compensation being awarded for all animals lost after leaving Dadur, the Serwans considering it more to their advantage that the beasts should die, and so release them from further attendance. The imposition of undue loads was frequent, hardly any consideration of the capability of the animal being taken, and, not unfrequently, these were increased by private stores of the attendants themselves, and the addition of their own weight to save the labour of walking. The load sanctioned by authority, viz.

five maunds or four hundred pounds, did not appear to be too great for a healthy and matured camel.

The systematic way of investigating disease is first, if fatal, to ascertain by a *post-mortem* examination the organs involved and the nature of the lesions; we next look around for *predisposing* causes; thirdly, *exciting* causes claim our attention. Having informed ourselves on these matters, we consider the best *means of obviating* the malady in healthy animals, a matter of even greater importance than curing those already affected. I do not intend to intimate that we were powerless with regard to treatment of the sick, but the means supplied were very scanty; the most simple and necessary drugs were not to be had. If veterinary supervision had been provided surely this would not have been the case. On joining the 15th Hussars at Robart, two days' march above Candahar, I found the regiment almost destitute of veterinary medicines and surgical means; they had been duly applied for, and as duly despatched by the principal veterinary surgeon, but never reached us, although the invoice arrived punctually; these, if sent to the head of a department at Candahar, would, in all probability, not have miscarried, and he would have facilitated their being forwarded to the corps requiring them.

Post-mortem examinations.—These revealed in every case that came under my notice pulmonary disease in almost all its varieties at Quetta, where the first were made; *acute* congestion and inflammation of lungs were evidently the causes of death, and such was the case in all instances during the inclement weather on the way up to Candahar. On the homeward journey, when the atmosphere was more genial, it was the *chronic* results which proved fatal. These chronic affections may be familiarly understood by the term consumption, not that the subjects showed the true lesions of phthisis, as it is medically called, but certainly corresponding with the more extended meaning of the word, as a "wasting away." Dense deposits, called tubercles, were found; abscesses in the substance of the lungs, named vomicæ; condensation, producing a liver-like appearance, denominated hepatisation; many parasites of the order, classed hydatids; and the caseous degeneration of blood, constituting a kind of embolism, were here located. An examination of the digestive organs certainly did not indicate structural derangement, but while the rumen was filled with ingesta, the second, third, and fourth stomachs, together with the intestines, were remarkably empty, showing that the food had collected in the first stomach, but that general debility

and interference with natural functions had prevented its being carried further on for the purpose of being properly digested and prepared for assimilation. In one case only did I find that the liver participated; in that one, however, tubercles existed, which would be the result of disordered circulation.

The deductions to be drawn from the foregoing are that the want of nutrition produced debility, and such deterioration of blood as to prevent the lungs, which it has been explained are so intimately associated with the circulation, performing their office properly, the result ultimately being absolute disorganisation of those organs themselves. In addition to this the paralysed condition of the digestive organs had been sympathised with by the respiratory, as we have seen they are capable of doing through their connection by means of the pneumogastric system of nerves. Practically, want of proper food, accompanied by exposure, so debilitated the camels as to predispose them to disease, and the severe cold, together with trying changes of atmosphere, excited disease of the lungs of an *acute* or quickly killing character; latterly the continued want of proper nutrition, although not associated with extreme exposure, induced *chronic* or more lingering disorder, which in many animals, although they were for a time equal to a certain amount of exertion, caused death when they were called upon for extra efforts, and the rate of mortality amongst them, exactly corresponding to the length of the marches, confirms the idea. Mr. Kettlewell suggests that the chronic diseases of the lungs might be of a scorbutic (scurvy) character, the result of depraved and impure blood through a deficiency of vegetable acids. A reference to the nature of scurvy in the human subject favours the notion; sailors, when deprived of vegetables at sea, are prone to scurvy; so may our camels have suffered from a similar deprivation in Afghanistan. One remarkable result of my *post-mortem* investigations was that the pleura or covering of the lungs and chest was in no instance involved. In most animals this membrane is nearly always included when the lungs themselves are attacked, and in this particular instance, where the chest was so especially exposed, it could hardly have been anticipated that it should have escaped; but such appears to be a peculiarity in the camel, for my personal observation was immediately endorsed on my mentioning the fact to Mr. Kettlewell, who had himself noticed the apparent anomaly. It will be gathered from the foregoing that disease of the lungs, then, was pre-eminently the most fatal; that some died of

dysentery, which is a known accompaniment of scurvy, I do not doubt, as I observed many camels during life much emaciated from that cause ; and I have heard that in the northern army many succumbed to the premature birth of calves, an accident which we can perceive to be the result of debility, but I have stated the fact of our camels being almost exclusively males. Beyond sore backs, which were very frequent, and as frequently concealed by not removing the pilanes (saddles), other affections than those I have noticed were not conspicuous. I have referred to such meagre accounts of camel diseases as we possess, but find that "paypsay" (pneumonia) and "soolée" (dysentery) were the greatest scourges during the expedition. A dropsical affection ("zaharbahd"), I am informed, is a frequent result of the debility produced by hardship and exposure, and was particularly prevalent during the siege of Delhi ; but I can safely assert that it was not a prominent malady in Afghanistan.

Predisposing causes of disease.—These may be very briefly noticed, attention merely being called to those embodied in this paper, such as a departure from ordinary habits in the way of feeding and attention, change of climate, continued exposure, and all the hardships inseparable from a campaign.

Exciting causes.—Improper food, overwork, bad quality of water, neglect in supplying water, and direct cruelty. Both predisposing and exciting causes will necessarily be considered under the head of "Methods of obviating Diseases."

Symptoms of the diseases mentioned.—Provided the opportunity occurs of invaliding an animal for a time, and by treatment giving it a chance of recovery, it is of the greatest importance to recognise such symptoms as will indicate the first approach of disease. These, in approaching pneumonia, are such as indicate general debility and a feverish state of the system. The nostrils are dry, and there is frequently an exudation of blood therefrom ; the membrane lining the mouth is also dry, and of a very dark colour from congestion. The animal is evidently languid and hangs back, tightening the leading-string in his nostril ; there is an occasional cough ; rumination will be suspended ; appetite completely lost or partially impaired ; constipation will accompany the other symptoms, or in some cases the reverse will be the case ; the urine is of a dark colour, and has an increased ammoniacal odour ; but there will not be perceptible respiratory difficulty or disturb-

ance ; neither, so far as my observation goes, is much information to be derived from auscultation (listening to the respiratory sounds by the application of the ear to the chest), still less by percussion (or tapping the parietes of the chest). These three latter statements are most irregular facts, difficult to theorise upon, but probably the pneumogastric nerve again offers a solution of the mystery. It is said that this nerve originates at a greater distance from the brain than in shorter-necked animals, consequently, being less intimately connected with the nervous centre, the sympathy of the lungs with general nervous disturbance may be diminished. The symptoms of dysentery are debility, accompanied by slimy evacuations from the bowels, of a very fetid odour ; the patient is restless, lying down and getting up frequently ; urine scanty and high coloured ; after a time blood is mixed with the slime ; the appetite is lost, and emaciation ensues. When blood is mixed with the evacuations the term “ penchees ” is applied.

Treatment of diseases.—At the advent of either of the above diseases rest and protection from cold are especially necessary, and the following are taken, from a publication on the diseases of camels, as appropriate medicines. In “ pneumonia ”—

| | | |
|----------------------|-------|----|
| Henbane (Hyoscyamus) | tolas | 6 |
| Dhatara seed | „ | 1 |
| Turmeric | „ | 24 |
| Mustard seed | „ | 24 |

Make into eighteen balls, and give one two or three times daily.

The appetite may be tempted by offering a variety of food frequently, and plain gram is often particularly relished.

In “ dysentery ” a quart of castor oil ought to be given, and repeated once or oftener, according to the appearance of the evacuations, continuing it when these are slimy. If the purging is not checked take—

| | | |
|-----------------------|------|----|
| Opium | tola | 1 |
| Hemp resin (Bang) . . | „ | 4 |
| Turmeric | „ | 24 |

Divide into eight doses and give one every eight hours, until the purging diminishes. I cannot myself speak from experience of the efficacy of these medicines, but should think the prescription for dysentery the most promising ; possibly alum, four to eight tolas twice daily, might be of service.

Methods of obviating diseases.—Foremost amongst these

decidedly stands a proper selection of animals for the duty by due supervision at the point of starting. It will be remembered that at Quetta I found twenty-six out of seventy dead camels only two years old; these would have been at once rejected by an inspector at Sukkur, and their lives saved; they were evidently unfitted for a campaign, in consequence of juvenility; it is possible, also, that others might have been found absolutely unfit from want of the condition necessary, and so saved from going through the useless ordeal; some might have been, and probably were, diseased at starting. (2.) Enforcement of duty on the part of the Serwans; their carelessness, cruelty, ignorance, and wilful neglect were most conspicuous. Surely some efficient means of discipline might be found with regard to them, so that we should not have had the animals fed at haphazard; not have allowed their prejudices to interfere with the camel, who, sometimes almost dying with thirst, attempted, when crossing a stream, to take a draught of water, but was dragged on by that painful peg and cord through the nostril; that we should not have had them refusing to move their charges about at Abdulla Khan instead of allowing them to lie and freeze for forty-eight hours, nor should we have had the food sometimes withheld altogether. That these men were too indifferent to report an invalid unable to carry a load; that they loaded indiscriminately; threw down the gram to a number at a time, when the strongest ate too greedily (as in one instance at Quetta, when bhoorah had insinuated itself into the air-tubes of the lungs and caused suffocation) and the weaker were robbed of their share; and that they were allowed to maltreat (to murder would be the correct term) in order that they should get compensation, and be themselves released from attendance, is notorious. (3.) One officer per regiment detailed to see that such abuses were not permitted, and to look to the well-being of these animals generally, would take an interest in his work, and such an arrangement would be welcomed, I know, by *all* commanding officers, for is not the efficiency of their transport of paramount importance? Was not the lack of it a constant source of anxiety in the Afghan campaign, and are not some of our reverses at the Cape attributable to deficiency in this particular? That supervision *will* preserve these animals was abundantly proved by the fact that few of the camels carrying the baggage of officers were lost, because they found it so necessary to look after them themselves. In making the suggestion of an officer being entrusted with this duty, it must not be understood that he requires special knowledge of

the animals at first; a well-considered code of directions might be drawn up for his use, and a very little practice would make him an adept at detecting a failing one, or a negligent Serwan. (4.) If suggestions from those whose business it was to make the preservation of the health and consequent efficiency of transport animals, their study met with a little more consideration from authority, possibly they might be an additional means of obviating loss. I did not deserve a rude rebuff by a general officer when, *doing my duty*, on the 23rd of March last at Bula Zai, by respectfully suggesting that the debilitated horses of the 15th Hussars should not be robbed of a portion of their gram for the use of camels, but rather that the grass cutters should be employed in gathering herbage for the latter. I endeavoured to explain that the gram would remain useless in the insufficiently distended rumen, while the herbage would really promote digestion, and those who have read this paper will know my suggestion was founded on scientific grounds. (5.) Some regulations as to feeding might be carried out. Deficiency of *bulk* of food appeared to be too little noticed. I have advocated feeding frequently; this might be done when opportunities occurred for repose, and a bait might be given at a halt when on the march, a provision that was totally neglected. It is acknowledged that grain is better given in the dry state, especially if gram be split and barley bruised; a certain admixture of some bulky material, such as bhoorah, is an advantage. Browsing should be allowed on every available opportunity. Feeding after a long exhaustive march, or after unavoidably prolonged abstinence, would require special regulations. It must be remembered that the stomach is principally muscular in its constitution, and shares in the general weariness; it must therefore be given time to regain its energy, and a little distension with satisfying food would induce the repose necessary for a return of the vigour required for the more active operation of propelling a highly nutritious supply forward; the latter, even if sent to the mouth for rumination, would there be premature, for the remaining two stomachs are, during exhaustion, deficient in digestive power, and the partially prepared aliment would irritate the bowels. With regard to water, it should not be given after a full feed, but is grateful even to the wearied organ, rapidly restores the normal fluidity of the blood which has been partially destroyed by abstinence, and, with the above exception, may be given whenever the animal feels inclined to drink it. (6.) Cruelty in forcing camels to march on when obviously unfit has been alluded to; it was a fertile source

of loss. Many exhausted ones might have recovered with a few days' rest and feeding, and some that were left behind as dying, did revive; for this purpose certain stations might be made available, although it is admitted that, in marching through a wild country, this is sometimes impossible; with a view, however, of resting the overwrought and supplying their places with those that had regained their strength, depôts might be more frequent, and for this purpose all transport stations could be utilised. (7.) Proper selections for different localities is of great importance. Plain camels did pretty well on the way to Candahar as far as Dadur; the Bolan Pass was most trying, the Kojuk almost equally so, though not so long; few fatal cases occurred amongst hill camels. Colonel McCleod, Commissary of Ordnance, started from Sukkur with eight hundred camels and eighty mules; he arrived at Candahar with insufficient of the former to carry his ammunition (I think less than one hundred and fifty); seventy-six of the latter accompanied him the whole journey.

Fair summary of camels that might have been saved during the South Afghan expedition.—This is a delicate subject, which must be left to inference or reasonable speculation. We must remember that a proportion of more than *one third* of the seventy dead camels at Quetta were only two years old; was there the same leaven of juveniles in all the batches which started from Sukkur during the earlier months? How many were killed by want of provision for proper feeding, when arrangements might have been made, had *some one* remembered that the ruminating stomachs require special accommodation? How many succumbed to unnecessary overdriving? How many were almost wilfully killed by negligent Serwans? How many water stores, everlasting as it has amused physiologists to call them, were allowed to run dry? I must repeat that officers' camels enjoyed a considerable immunity from all these evils, and leave my readers to speculate, if it please them, as to the numbers that *might* have been saved.

ON PLANTS IN RELATION TO ANIMALS.

By Professor JAMES BUCKMAN, F.G.S., F.L.S., &c.

(Continued from p. 636.)

WE come now to the examination of four genera of the order under review, the names of which have only to be

recorded to show the least observant among us the great beauty and interest of the species that will here be referred to.

They are all of them denizens of the garden, where they have kept their place from a very remote period, not only on account of their bright effects, but for the uses to which some of them have been applied.

These consist of the following :

1. *AQUILEGIA*—*Common Columbine*.
2. *DELPHINIUM*—*Larkspur*.
3. *ACONITUM*—*Aconite*.
4. *PÆONIA*—*Pæony*.

1. The *Aquilegia* is so named from the spurs of the petals, which are supposed to have a kind of resemblance to the claws of the eagle. The wild flower is usually of a dark blue or purple colour, but cultivated examples are remarkable for their great variety in colour, as white, pink, light and dark blue, purple, &c.

The spurred corolla is a curious and interesting feature, each petal having a spur, five of which converge around the pedicle at the base of the flower. The common name is from *columba*, a dove, either from a fancied resemblance to that bird, or from the dove-like colours which some of the cultivated forms assume.

The flowers are remarkable for the double varieties which occur in the garden ; sometimes in these the number of the corollas are multiplied, whilst in others each petal will have this arranged internally.

The bottom of these petals is termed a nectary, and every child knows that the rounded knob of the spur is usually full of a very luscious honey. The bee is also aware of this, but as he cannot reach it in the usual way it will often be seen that this reservoir of sweets has been eaten into by the insect to extract the honied treasure. We once saw in a garden in Dorset a specimen of columbine in which all the petals were flat and spurless, attached to the base of the flower in the same manner as the petals of the clematis, to the garden forms of some of which it bore a not inapt resemblance. This case is very curious, as it leads to the inquiry—Is the spur a generic characteric, or is it the result of a peloria mode of growth? If these simpler petals be taken as the initiative of the plant, we must conclude that from the showy nature of these flowers they have everywhere been pressed into cultivation, and therefore, that the wild plants that we find in our woods are not truly wild, but have

strayed from the garden—it may be from the physic garden of the anchorite or some monastic order, which seems probable, for, as a rule, they were much grown in such establishments.

Mrs. Lankester tells us that “in Brown’s ‘British Pastorals’ we have it recorded that in former times a columbine was the insignia of deserted lovers, but how this originated does not appear.

‘The columbine, by lonely wand’rer taken,
Is then ascribed to such as are forsaken.’

The whole plant used to be recommended medicinally, but it belongs to a suspicious natural order, and Linnæus asserts that children have lost their lives by taking an overdose of it.*

At present even the rustic does not use the columbine as a medicine, though at one time its leaves, flowers, and seeds had each their advocates as “sovereign remedies.”

2. The *Delphinium* is derived, according to Sir W. Hooker, from *Delphinus*, or $\delta\epsilon\lambda\phi\iota\nu$, a *dolphin*, on account of the shape of the upper sepal.

The *D. consolida* is occasionally found in corn fields, especially in Cambridgeshire. It occurs plentifully in the Channel Islands. It is frequently met with in most arable districts, where, however, it seldom becomes even naturalised although it is being constantly introduced in foreign seeds.

Dr. Lynn has introduced two forms in the New Flora, under the names of *D. Ajacis* and *D. consolida*, the former being a larger and more conspicuous form, and is the one usually met with as a garden annual; the latter is smaller in all its parts, but we cannot consider them as distinct species, as both are very variable, both in size and in colour, taking on, in the latter respect, the usual changes of most blue-flowered plants.

A species is sometimes grown in the garden, which produces quite large seeds, which latter are known to the druggist as stavesacre seeds, upon which we quote the following:—

“*D. staphisagria*, or stavesacre, was used medicinally by the Greeks, and still finds a place in the Pharmacopœia, though now rarely employed. The seeds contain the active principle in great abundance, and hence are ordered to be used in the form of ointment to destroy vermin.

“*Delphinia* is an extremely acrid, bitter, white powder, prepared from the seeds, and used externally in cases of rheumatism and neuralgia. Numerous species and varieties of this genus are cultivated in gardens. *D. consolida*, a com-

* ‘English Botany,’ vol. i, p. 61.

mon European plant, is occasionally found in a half wild state on the borders of fields. Its name was given in reference to its power, real or imaginary, of healing or consolidating wounds. *D. Ajacis*, a common garden plant, derives its name from certain markings on the petals, presenting more or less resemblance to the letters AI AI; hence, also, it has been conjectured to be the hyacinth of the ancients, described as possessing similar markings. Dr. Daubeney, the latest commentator on the plants mentioned in ancient Greek and Latin writers, concludes that the term *huahinthos* was in general applied to some plant of the lily tribe, but that the poets confounded with this the larkspur, which has upon it the markings alluded to; and that the name hyacinth was given, in the first instance, to the plant which most distinctly exhibited them.

“Some of the cultivated species, such as *D. grandiflorum*, *D. chinense*, *D. sibiricum*, &c., are called bee larkspurs, from the resemblance of the petals, which are studded with yellow hairs, to a humble bee whose head is buried in the recesses of the flower. One of the most beautiful species in cultivation is *D. formosum*, with large, rich, blue flowers, and *D. cardinale* is remarkable for its scarlet flowers.”*

All the species are powerful poisons. The larkspur was formerly used in rustic medicine, but is highly dangerous in uneducated hands. Still the whole herbage may be useful in the shape of decoction, as a wash to kill the parasites to which most domestic animals are subject. The active principle has been separated, and is known as *Delphinia*. It is a powerful irritant poison, with much the same effects as *Veratrine*, and both are equally dangerous in incautious hands.

3. *Aconitum* is a well-known garden plant, which from the peculiar shape of the flower rejoices in the common name of monkshood. The whole flower is usually of a dark indigo blue, being tall, and forming a handsome spike of peculiarly formed, irregular flowers. Like the others of this order, they assume various colours under cultivation, but the root-stock of all is similar, being fleshy, like a poor turnip, and hence the name napellus, in which condition it is often mistaken for horseradish, and being used as a condiment for beef has frequently been the cause of poisoning. Mrs. Lankester says, “the root has occasionally been mistaken for horseradish, and has been eaten accordingly with fatal results; it is, however, shorter, darker, and more fibrous than horseradish.” Its dark external rind is very significant, but

* M. T. M., in ‘Treasury of Botany,’

instead of being more fibrous it is less so than horseradish.

When taken in over-doses, by accident or otherwise, the best treatment is mustard emetics.

Aconite and its preparations has a place in the 'Veterinary Pharmacopœia,' but it is usually only employed in the form of liniment. Its active principle is aconitine, a fiftieth of a grain of which is sufficient to kill a sparrow, and is said to be far more powerful than prussic acid.

It appears to be perfectly wild on both sides of a stream which separates Dorset from Somerset, in a very retired situation between Sherborne and Crewkerne, near Whistle Bridge. It is also reported from near Newton, Devon; near Leominster, Hertfordshire; and in Monmouthshire.

It is a very handsome plant in our shrubberies and gardens, but should be treated with great caution, as even the eating a bit of a leaf is sufficient to benumb the tongue and fauces. Its juice and extract is said to cause contraction of the pupil, in which it differs from the action of belladonna.

ACONITUM.—An important genus belonging to the order *Ranunculaceæ*, and botanically characterised by the calyx being not of a green colour, but blue or yellow, of five pieces, the upper of which is convex, and in form like a helmet. Within this are concealed two singularly-shaped petals, formerly considered to be nectaries; the form of these bodies is somewhat like that of a hammer. There are also three other petals, very small and inconspicuous, though occasionally they also become hammer shaped, like the two upper ones.

The stamens are numerous, and the fruit consists of from three to five follicles.

The plants constituting this genus are found in Europe and Northern Asia, and a few are natives of North America.

One species (*A. napellus*) is said to have been found wild in Britain, but this is open to grave doubts. All the plants of this genus possess virulently poisonous properties; the roots of some of the Indian species produce the Bikli poison of Nepal, one of the most dangerous of poisons. The roots of *A. ferox* (supposed to be a variety of *A. napellus*) are used in northern parts of Hindostan for poisoning arrows, with which tigers are destroyed. A tiger shot from a bow in Assam was found dead at only sixty yards from the spot, so soon did the poison take effect. Several kinds are commonly cultivated in gardens, especially *A. napellus*, the

fleshy roots of which have been occasionally used by mistake for horseradish, and produced fatal results.

This plant has a stem about three feet in height, with dark-green glossy leaves, deeply divided in a palmate manner; the flowers are placed in erect clusters, and are of a dull-blue colour; the roots or, more properly, rootstocks, are of a tapering form, of a dark-brown colour externally, and white internally. The younger roots, which are placed on either side of the older one, are of a lighter colour. The taste is bitter at first, but after a time numbness and tingling of the lips and tongue are perceived. The root has none of the acridity or pungency that fresh horseradish possesses. The two plants are so dissimilar that it would seem impossible so terrible a mistake should be made, but it has generally arisen from taking the root of the aconite when the leaves and flowers, which are so unmistakable, have died away.

The rootstock of the horseradish is much larger than that of the aconite, of a tapering form, dirty yellow externally, and the top or crown marked with transverse scars, indicating the position of the old leaves; its odour and taste are at first pungent and acrid. The venom of the aconite appears to depend upon the presence of an alkaloid called aconitine, which is so extremely poisonous that so small a dose as one-fiftieth part of a grain has well-nigh produced fatal results. A tincture of aconite root, or a solution of the alkaloid, is occasionally used with much success as an application to relieve rheumatic pains, but it should be employed with the greatest caution.*

4. *Pæonia*, so named in honour of the physician *Pæon*, who is said to have cured Pluto with it of a wound received from Hercules. The specific name is from the colour of the petals.

The *P. corallina* is well known from the double examples so common to the garden. In the wild state it has five large, rounded, red or scarlet petals.

It is found on the Steep Holmes, a small island in the Severn Sea, perhaps the only really wild habitat in Britain. At one time it was abundant on this exposed rock, but it is yearly getting scarcer, and threatens to be annihilated in a short time.

The plant was formerly extolled for many virtues, and there can be no doubt but that it possesses the usual stimulative and anodyne qualities of so many of the order. At present its only use seems to be in the formation of anodyne

* The 'Treasury of Botany.'

necklaces, to which its roots are applied. These, of course, can have but little, if any, effect, but still it is significant.

Mrs. Lankester says:—"At the present day necklaces are made of small beads carved from the root of the pæony, and sold in respectable chemists' shops, to be worn around the necks of young children when cutting their teeth as 'anodyne necklaces.'" "Can we be severe on the follies of our ancestors," she remarks, "when such superstitions linger in our own day?"

The fact is that the series of plants we have now examined possesses such active individuals that there is no wonder that at one time they should have been much employed in some empirical form, and it is perhaps wholesome that the dread inspired by their use should have caused their disuse, except in the innocent form just described.

Pathological Contributions.

CATTLE PLAGUE.

IN the Russian empire cattle-plague appears to be still very prevalent in the Governments bordering on Austria and Germany, and in those adjoining the Black and Baltic Seas.

In the dominions of Austria the cattle-plague has recently appeared in the district of Klisebo, in Dalmatia; otherwise Austria-Hungary was reported to be free from that disease on the 25th of August last.

PLEURO-PNEUMONIA.

THIS disease has diminished to a considerable extent in the Kingdom of the Netherlands, only five cases having been reported during the four weeks ending the 6th of September of this year in comparison with fifty-four cases in the corresponding period of the year 1878.

THE CONTAGIOUS DISEASES (ANIMALS) ACT, 1878.
 RETURN of the NUMBER of PLACES in GREAT BRITAIN upon which Contagious or Infectious Disease (except Sheep-Scab) has been reported
 to have existed during the Week ended September 6th, 1879, with particulars relating thereto.

PLEURO-PNEUMONIA.

| | Farms or other Places. | | | Cattle attacked. | | Diseased Cattle. | | | | Cases which existed in previous Weeks not reported until this Week. | |
|---|--|---|---|--|---------------------------|------------------|-------|------------|------------|---|------------------|
| | Number reported upon this Week which have been previously reported upon. | Number upon which Fresh Outbreaks have been reported to have taken place during the Week. | Total Number reported upon during the Week. | Remaining diseased from the previous Week. | Attacked during the Week. | Killed. | Died. | Recovered. | Remaining. | Fresh Outbreaks. | Cattle attacked. |
| ENGLAND. | | | | | | | | | | | |
| COUNTY.* | | | | | | | | | | | |
| Berks | 1 | ... | 1 | 1 | ... | 1 | .. | .. | .. | 1 | 1 |
| Buckingham | 3 | ... | 3 | 1 | 1 | 2 | .. | .. | .. | .. | .. |
| Cambridge (ex Liberty of the Isle of Ely) | 1 | ... | 1 | ... | .. | .. | .. | .. | .. | .. | .. |
| Cumberland | 6 | ... | 6 | ... | 2 | 2 | .. | .. | .. | .. | .. |
| Derby | 7 | ... | 7 | ... | 6 | 6 | .. | .. | .. | .. | .. |
| Dorset | 1 | ... | 1 | 1 | 9 | 10 | .. | .. | .. | .. | .. |
| Essex | 12 | 1 | 13 | 11 | 4 | 12 | .. | .. | 3 | 1 | 9 |
| Hants | 1 | ... | 1 | ... | .. | .. | .. | .. | .. | .. | .. |
| Huntingdon | ... | 1 | 1 | ... | 1 | .. | .. | .. | 1 | .. | .. |
| Kent (ex. Metropolis) | 3 | 1 | 4 | ... | 3 | 2 | .. | .. | 1 | .. | .. |
| Lancaster | 19 | 4 | 23 | ... | 4 | 4 | .. | .. | .. | .. | .. |
| Leicester | 8 | ... | 8 | ... | ... | ... | .. | .. | .. | .. | .. |
| Lincoln, Parts of Holland | 1 | ... | 1 | ... | ... | ... | .. | .. | .. | .. | .. |
| ” Lindsey | 1 | ... | 1 | ... | ... | ... | .. | .. | .. | .. | .. |
| Middlesex (ex Metropolis) | 2 | ... | 2 | ... | 1 | 1 | .. | .. | .. | .. | .. |

PLEURO-PNEUMONIA—continued.

| | Farms or other Places. | | | Cattle attacked. | | Diseased Cattle. | | | | Cases which existed in previous Weeks not reported until this Week. | |
|--|--|---|---|--|---------------------------|------------------|-------|------------|------------|---|------------------|
| | Number reported upon this Week which have been previously reported upon. | Number upon which Fresh Outbreaks have been reported to have taken place during the Week. | Total Number reported upon during the Week. | Remaining diseased from the previous Week. | Attacked during the Week. | Killed. | Died. | Recovered. | Remaining. | Fresh Outbreaks. | Cattle Attacked. |
| ENGLAND. | | | | | | | | | | | |
| County*—continued. | | | | | | | | | | | |
| Norfolk | 3 | 2 | 5 | 2 | 2 | 4 | .. | .. | .. | .. | .. |
| Northampton (ex Soke of Peterborough). | 4 | .. | 4 | .. | .. | .. | .. | .. | .. | .. | .. |
| Notts | 2 | 1 | 3 | .. | 3 | 3 | .. | .. | .. | .. | .. |
| Salop | 5 | .. | 5 | .. | .. | .. | .. | .. | .. | .. | .. |
| Stafford | 3 | .. | 3 | .. | 2 | 2 | .. | .. | .. | .. | .. |
| Suffolk | 4 | .. | 4 | .. | .. | .. | .. | .. | .. | .. | .. |
| Surrey (ex Metropolis) | 3 | .. | 3 | 4 | 6 | 7 | 3 | .. | .. | 2 | 4 |
| Worcester | 3 | .. | 3 | .. | 3 | 3 | .. | .. | .. | .. | .. |
| York, North Riding | 2 | 1 | 3 | .. | 3 | 3 | .. | .. | .. | .. | .. |
| " West Riding | 14 | 8 | 22 | .. | 10 | 10 | .. | .. | .. | .. | .. |
| Liberty of the Isle of Ely | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. |
| The Metropolis | 7 | 2 | 9 | .. | 12 | 12 | .. | .. | .. | .. | .. |
| WALES.—County*. | | | | | | | | | | | |
| Anglesey | .. | 1 | 1 | .. | 1 | .. | .. | .. | 1 | .. | .. |

SCOTLAND.

COUNTY.*

| | | | | | | | | | | | | |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Aberdeen | 13 | ... | 13 | 2 | 7 | 7 | 104 | 3 | ... | 2 | ... | ... |
| Edinburgh | 3 | ... | 3 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Fife | 4 | 2 | 6 | ... | 4 | 4 | ... | ... | ... | ... | 1 | ... |
| Haddington | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Kinross | 3 | ... | 3 | ... | 1 | 3 | ... | ... | ... | ... | ... | ... |
| Perth | 1 | 1 | 2 | ... | 3 | 3 | ... | ... | ... | ... | ... | ... |
| Renfrew | 4 | ... | 4 | 1 | 3 | 3 | ... | ... | ... | ... | ... | ... |
| Roxburgh | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Wigtown | 1 | ... | 1 | 3 | 1 | ... | 4 | ... | ... | ... | ... | ... |
| TOTAL | 147 | 25 | 172 | 26 | 89 | 104 | 3 | ... | 8 | 5 | 15 | |

FARCY.

| ENGLAND. COUNTY.* | | | | Horses attacked. | | Diseased Horses. | | Horses attacked. | | Horses attacked. | |
|---------------------------|---|-----|----|------------------|-----|------------------|-----|------------------|-----|------------------|-----|
| | | | | | | | | | | | |
| Middlesex (ex Metropolis) | 1 | ... | 1 | 1 | ... | ... | ... | 1 | ... | ... | ... |
| Warwick | 1 | ... | 1 | 1 | ... | ... | 1 | ... | ... | 1 | 1 |
| The Metropolis | 5 | 8 | 13 | 3 | 15 | 12 | ... | 6 | ... | 1 | 1 |
| TOTAL | 7 | 8 | 15 | 5 | 15 | 13 | ... | 7 | ... | 2 | 2 |

FOOT-AND-MOUTH DISEASE.

| | Farms or other Places. | | | Animals attacked. | | Diseased Animals. | | | | Cases which existed in previous Weeks not reported until this Week. | |
|--|--|---|---|--|---------------------------|-------------------|-------|------------|------------|---|-------------------|
| | Number reported upon this Week which have been previously reported upon. | Number upon which Fresh Outbreaks have been reported to have taken place during the Week. | Total Number reported upon during the Week. | Remaining diseased from the previous Week. | Attacked during the Week. | Killed. | Died. | Recovered. | Remaining. | Fresh Outbreaks. | Animals attacked. |
| ENGLAND. | | | | | | | | | | | |
| COUNTY.* | | | | | | | | | | | |
| Berks | 2 | ... | 2 | 8 | ... | ... | ... | 8 | ... | ... | ... |
| Cambridge (ex Liberty of the Isle of Ely). | 18 | ... | 18 | 1285 | 10 | ... | 21 | 589 | 685 | 2 | 200 |
| Dorset | 10 | ... | 10 | 470 | ... | ... | ... | 250 | 220 | ... | ... |
| Hants | 4 | ... | 4 | 230 | 20 | 1 | 3 | 157 | 89 | ... | ... |
| Huntingdon | ... | 2 | 2 | ... | 214 | ... | 2 | ... | 214 | ... | ... |
| Kent (ex Metropolis) | 1 | 1 | 2 | 127 | 2 | ... | ... | ... | 127 | ... | ... |
| Monmouth | 1 | ... | 1 | 15 | ... | ... | 1 | ... | 14 | 1 | 15 |
| Norfolk | 1 | ... | 1 | 130 | ... | ... | ... | ... | 130 | ... | ... |
| Salop | 2 | 1 | 3 | 5 | 2 | ... | ... | 3 | 4 | ... | ... |
| Somerset | 1 | ... | 1 | 1 | ... | ... | ... | ... | 1 | ... | ... |
| Sussex | 1 | 1 | 2 | 3 | 11 | ... | ... | ... | 14 | ... | ... |
| Wilts | 1 | ... | 1 | 18 | ... | ... | ... | 11 | 7 | ... | ... |
| TOTAL | 42 | 5 | 47 | 2292 | 259 | 1 | 27 | 1018 | 1505 | 3 | 215 |

GLANDERS.

GLANDERS.

| | | | | | Horses attacked. | | Diseased Horses. | | | | Horses attacked. |
|---------------------------|---|---|-----|-----|------------------|-----|------------------|-----|-----|-----|------------------|
| | | | | | | | | | | | |
| ENGLAND. | | | | | | | | | | | |
| COUNTY.* | | | | | | | | | | | |
| Buckingham | . | . | ... | 1 | ... | 1 | ... | ... | 1 | ... | ... |
| Hants | . | . | ... | 2 | ... | 6 | ... | ... | 6 | ... | ... |
| Hertford | . | . | 1 | 3 | 1 | 3 | ... | ... | ... | 1 | 1 |
| Kent (ex Metropolis) | . | . | ... | 2 | ... | 2 | ... | ... | ... | ... | ... |
| Lancaster | . | . | 1 | 1 | 1 | ... | ... | ... | 1 | ... | 1 |
| Middlesex (ex Metropolis) | . | . | ... | 1 | ... | 1 | ... | ... | ... | ... | ... |
| Stafford | . | . | ... | 1 | ... | 1 | ... | ... | ... | ... | ... |
| The Metropolis | . | . | ... | 5 | ... | 5 | ... | ... | ... | ... | ... |
| WALES. | | | | | | | | | | | |
| COUNTY.* | | | | | | | | | | | |
| Glamorgan | . | . | 1 | ... | 1 | ... | ... | ... | ... | ... | ... |
| SCOTLAND. | | | | | | | | | | | |
| COUNTY.* | | | | | | | | | | | |
| Edinburgh | . | . | ... | 1 | ... | 1 | ... | ... | ... | ... | ... |
| Roxburgh | . | . | 1 | ... | 1 | 1 | ... | ... | ... | 1 | 1 |
| TOTAL | . | . | 4 | 15 | 19 | 4 | 19 | ... | 8 | 3 | 3 |

SWINE FEVER.

| | Farms or other Places. | | | | Swine attacked. | | Diseased Swine. | | | | Cases which existed in previous Weeks not reported until this Week. | |
|---|--|---|---|--|---------------------------|---------|-----------------|------------|------------|------------------|---|--|
| | Number reported upon this Week which have been previously reported upon. | Number upon which Fresh Outbreaks have been reported to have taken place during the Week. | Total Number reported upon during the Week. | Remaining diseased from the previous Week. | Attacked during the Week. | Killed. | Died. | Recovered. | Remaining. | Fresh Outbreaks. | Swine attacked. | |
| <hr/> | | | | | | | | | | | | |
| ENGLAND. | | | | | | | | | | | | |
| COUNTY.* | | | | | | | | | | | | |
| Bedford . | 1 | ... | 1 | ... | 11 | ... | ... | ... | ... | ... | ... | |
| Berks . | 4 | 1 | 5 | ... | 3 | 10 | 1 | ... | ... | ... | ... | |
| Buckingham . | 1 | 1 | 2 | ... | 1 | ... | ... | ... | 3 | ... | ... | |
| Cambridge (ex Liberty of the Isle of Ely) | 2 | ... | 2 | ... | 1 | ... | 1 | ... | ... | ... | ... | |
| Chester . | 2 | 3 | 5 | 2 | 4 | 3 | 1 | ... | 2 | 1 | 3 | |
| Cornwall . | 1 | ... | 1 | 3 | ... | 7 | 3 | ... | ... | ... | ... | |
| Derby . | 3 | 4 | 7 | ... | 8 | ... | 1 | ... | ... | ... | ... | |
| Devon . | ... | 1 | 1 | ... | 4 | ... | ... | ... | 4 | ... | ... | |
| Dorset . | 10 | 3 | 13 | 10 | 26 | 11 | 3 | ... | 22 | ... | ... | |
| Essex . | 2 | 4 | 6 | 1 | 109 | 101 | 9 | ... | ... | ... | ... | |
| Gloucester . | 3 | 1 | 4 | ... | 3 | ... | 3 | ... | ... | ... | ... | |
| Hants . | ... | 1 | 1 | ... | 7 | ... | ... | ... | 7 | ... | ... | |
| Hertford . | ... | 1 | 1 | ... | 14 | 8 | 6 | ... | ... | ... | ... | |
| Huntingdon . | 4 | 1 | 5 | ... | 20 | 7 | ... | ... | 13 | ... | ... | |

Facts and Observations.

ELECTION OF DR. COBBOLD AS PRESIDENT OF THE QUEKETT MICROSCOPICAL CLUB.—At the annual meeting of the QUEKETT MICROSCOPICAL CLUB, held in the library of University College on the evening of 25th July, 1879, Dr. T. Spencer Cobbold, F.R.S., &c., was by unanimous vote elected to the office of President for the coming year as successor to Professor T. H. Huxley, LL.D., F.R.S., &c. The Club has a large and influential number of constituents, among whom are several members of the veterinary profession.

SMITHFIELD CATTLE SHOW.—SPECIAL PRIZES FOR "FOOD ANIMALS."—The *City Press* states that "the Court of the Butchers' Company have decided to offer a prize of twenty-five guineas and one of ten guineas for the best ox and the best pen of sheep exhibited at the Christmas Cattle Show *for the purposes of food*. This is exceedingly good news. We shall in time get our fat stock shows judged solely on this principle, as in the United States of America."

AMERICAN IMPORTATIONS—TRANSIT LOSSES.—From the returns which have been presented to the Liverpool underwriters from time to time since January last, a calculation as to the average *percentage* of loss of live stock during the voyage from America and Canada has been made by them. It appears that in the case of cattle the loss is about 3 per cent. of the numbers shipped, while sheep suffer to the extent of only 2 per cent. The heaviest mortality is in the case of pigs, being over 10 per cent. The compilation of these calculations has been carefully effected. They show a great diminution in the proportion of loss since the first establishment of the trade in live stock, at which time the deaths amongst the cattle amounted in many instances to 25 per cent. The decreased ratio is due to the means which are now adopted for the comfort of the cattle on the voyage. The space devoted to their accommodation is usually sufficiently large to prevent undue crowding, and special attendants accompany each consignment of stock, whereas formerly the cattle were huddled indiscriminately into the space at the disposal of the shipper, and left principally to shift for themselves during the passage. In some instances the same state of affairs obtains now.—*Mark Lane Express*.

VETERINARY SCIENCE IN NATAL.—The Special Correspondent of the *Daily Telegraph* with Sir Garnet Wolseley, writing from Natal, says that "Veterinary science here is at a very low ebb, and Colonists seem content that it should be so, sitting down under the pressure of equine diseases as if they were a necessity, when often a little careful study and management would remove the ills they complain of. It is somewhat curious to note that, in spite of the superiority claimed by Colonists for their own horses, there is a keen competition for the imported mares which have been sold within the last few days, and that very high prices have been paid for them by colonial breeders. I have it on very high authority that were veterinary science studied a little more in Natal, the present lamentable mortality among horses would speedily diminish, and that the horse would largely take the place of the ox as a transport animal. But why deprive the Colonist of a grievance against nature?"

TRICHINOSIS IN THE HIPPOPOTAMUS.—M. S. Heckel recently submitted a note to the French Academy of Sciences on the discovery of *Trichina spiralis* in a hippopotamus. The animal, about two years of age, had been presented to the Zoological Gardens of the city of Marseilles by the Khedive. At the time of its reception in the gardens it was suffering from boils, which presently ulcerated, and in the end killed the animal. During the four months that this hippopotamus had been confined in Marseilles it had been fed on milk in which flour was mingled and fresh vegetables; but nothing is known of the treatment of the animal before it left Egypt. In the course of stripping the flesh off the carcase in order to preserve the skeleton for the Museum of Natural History at Marseilles, M. Heckel accidentally discovered that the muscles of the animal were infested with the cysts of *Trichina spiralis*. This discovery took place at too late a period of the process of stripping to enable M. Heckel to make an exhaustive examination of the extent of dissemination of the parasite in the body.—*Lancet*.

THE USE OF IODOFORM.—Finely powdered iodoform, or mixed one part of three with unguentum petrolei, makes an admirable application to the most sensitive surface, such as irritable ulcers, &c. It is a good rule never to apply soap to such surfaces; even the best obtainable is often irritating; and water should be thoroughly boiled and used when cooling. To dispel the odour of the iodoform, so nauseous to many, it may be mixed with equal parts of tannin, or employed in ethereal solution.—*Med. and Surg. Rep.*

THE VETERINARIAN, OCTOBER 1, 1879.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

THE INFLUENCE OF THE WET SEASON ON THE CONDITION OF STOCK.

ABUNDANT moisture almost necessarily leads to the growth of luxuriant herbage, and the past season has not been an exception to the rule. Everywhere vegetation has in appearance flourished, and there has been no lack of the green things of the earth. Trees have been, and indeed are now, covered with verdant leaves to an extent that has occasioned remark, and the earth has been clothed with a dense mass of herbage which to the eye promised more than it has apparently been able to perform. As we hear the constant complaint that the animals, lambs in particular, which have been sustained on the grass chiefly have no "proof" in them, and it is not difficult to understand how this state of things has been brought.

Excessive moisture has the effect of stimulating the growth of herbage, probably by supplying water, which is one of the principal constituents. Grass so grown has always been estimated at a very low nutritive value, and in many cases there has been evidence to justify a suspicion that food of this quality has a direct influence in the production of various forms of anæmia. Some years ago Dr. Voelcker made a series of experiments on grasses which were grown under the unfavorable conditions which have recently obtained, and found that, not only was the quantity of water in excess, but, further, that the amount of nitrogen was higher than usual, while the proportion of proteids was deficient. The conclusion to be drawn from the inquiry was that under the exciting effects of continued rain plants did not become perfectly mature or ripe, and that, therefore, while the quantity was in excess of the ordinary yield, the value of the herbage for feeding was so far lessened that the total result was a deficiency of feeding material. Setting

on one side for a moment the question of the effects of unripe, luxuriant crops of grass in the production of blood diseases, we may appeal to science and practice in proof of the facts relating to their low feeding value; and in the next place, we may inquire what steps the stock owner should take to neutralise the injury which is likely to result from the consumption of food which is abundantly charged with water, but wanting in the elements on which the growth of fat and flesh depend.

In theory the remedy for the evils above stated is easy enough to select; but, unfortunately, the circumstances of its application are not always favorable. Good dry, nutritive manger food should undoubtedly be used as supplementary to the innutritious, unripe grasses. It is not necessary to inform the breeder and feeder of stock what food substances are likely to prove most valuable. The real difficulty is the cost of such stuffs as oil cake, oats, maize, meal, hay, &c.; but a little reflection will suffice to show practical men that the outlay will be remunerative. In fact, the addition of concentrated foods to the watery fodder on which animals have for some time past subsisted seems to be the only feasible way to protect them from those maladies which are likely to supervene in the immature state of the system which has necessarily resulted from the peculiar climatic conditions under which we have suffered.

Extracts from British and Foreign Journals.

REGULATIONS FOR SALE OF MILK IN MELBOURNE.

THE Melbourne *Chemist and Druggist* states that the City Health Committee have framed a series of regulations which it is proposed the corporation should adopt, and the purveyors of milk within the city be invited to voluntarily subscribe to, pending legislation on the subject. These regulations, which are based upon the 34th section of the Contagious Diseases (Animals) Act, England, 1878, provide that in the event of a dairyman entering into the covenant his name shall be advertised in three Melbourne newspapers at least once in three months, and that such notification will be equivalent to a guarantee that he will carry out the following pro-

visions, viz.: That he will at all times permit the proper officers to visit and inspect his premises; that within a reasonable time he will effect any alteration in his premises requested by the local board; that his premises shall be kept constantly clean, and that in the months of April and October they shall be thoroughly cleaned and whitewashed with a lime and disinfectant preparation; that he shall not use any premises not passed by the board, and that no contaminated milk shall be mixed with pure milk. They also set out that, in the event of any one becoming ill from an infectious disease on the premises of the dairyman notice shall at once be given to the health officer, whose instructions must be carried out, that no person so suffering shall have anything to do with the milk, and that if any dairyman break any of the regulations his name shall be struck off the register.

WANDERING NEEDLES.

THE vagaries of needles which have been introduced in the body, and have escaped immediate removal, have in all ages attracted the attention of collectors of the marvellous in medicine. Hildanus related an instance of a woman who swallowed several pins and passed them six years afterwards; but a more remarkable instance of prolonged detention was lately recorded by Dr. Stevenson, of Detroit.—That of a lady aged seventy-five, who last year passed, by the urethra, after some months' symptoms of vesical irritation, a pin which she had swallowed while picking her teeth with it in the year 1835—forty-two years previously. Occasional pain in the throat was the only immediate symptom, but in 1845 she was seized with severe gastric pain, which passed away, and she had no further symptoms until hæmaturia in 1876. This curious tolerance of such foreign bodies exhibited by the tissues is often observed in lunatic asylums. M. Silvy recorded some years ago the case of a woman who had a *penchant* for pins and needles so strong that she made them, in effect, part of her daily diet, and, after her death, 1400 or 1500 were removed from various parts of the body. Another case, almost as striking, has been recorded by Dr. Gillette—that of a girl in whom, from time to time, needles were found beneath the skin, which they perforated, and were removed by the fingers or forceps. Concerning the way in which they had got into her system no information could be extracted from her. She was carefully watched, and in the course of eighteen months no less than 320 needles were extracted, all being the same size. Most were black and oxidized, but some had retained

their polish. The majority were unbroken. They passed out of various parts of the body above the diaphragm at regular intervals, but in a sort of series, and always in the same direction. Most escaped in the region of the left nipple, and a few escaped in the arm, axilla, thigh, temple, and cheek. Sometimes several passed out of the same opening. The largest number which escaped in a single day was 61. A curious phenomenon preceded the escape of each needle. For some hours the pain was severe, and there was considerable fever. She then felt a sharp pain, like lightning, in the tissues, and on looking at the place at which this pain had been felt, the head of the needle was generally found projecting. The needles invariably came out head foremost. No bleeding was occasioned, and not the least trace of inflammation followed. The doctor in attendance extracted 318. They were sometimes held firmly, and seemed to be contained in a sort of indurated canal. It was conjectured that they had been swallowed with suicidal intentions; but, on the other hand, the way in which the needles escaped in series, and their direction with the head outwards, suggested that they had been introduced through the skin. That little weight is to be attached to the place at which the needles escape as proof of their mode of introduction is evident from a case recorded by Villars of a girl who swallowed a large number of pins and needles, and two years afterwards, during a period of nine months, 200 passed out of the hand, arm, axilla, side of thorax, abdomen, and thigh, all on the left side. The pins, curiously, escaped more readily and with less pain than the needles. Many years ago a case was recorded by Dr. Otto, of Copenhagen, and mentioned at the time in the *Lancet*, in which 395 needles passed through the skin of an hysterical girl, who had probably swallowed them during an hysterical paroxysm; but these all emerged in the regions below the level of the diaphragm, and were collected in groups, which gave rise to inflammatory swellings of some size. One of these contained 100 needles. Quite recently Dr. Bigger described before the Society of Surgery of Dublin a case in which more than 300 needles were removed from the body of a woman who died in consequence of their presence. It is very remarkable in how few of the cases the needles were the cause of death, and how slight an interference with function their presence and movement cause. From time to time their detection by a magnetic needle is proposed as a novelty; but as Dr. Gillette reminds us, this method was employed by Smee nearly 40 years ago, and has often been adopted since.—*Lancet*.

DISEASES OF LAMBS AND CALVES.

[The following paper, somewhat abridged from the report in the *Nottinghamshire Guardian*, was read by Mr. BRETT, before the Nottingham Chamber of Agriculture in June last.]

THE lamb disease was of unusual severity the last autumn. In many cases more than 30 per cent. have been lost; in some cases I fear 50 per cent. No doubt the extraordinary wet season has had much to do with it. Yet I do believe it is in a great measure for the want of observation in addition to the wet season. The usual time of weaning lambs is in July. Generally a piece of old grass is chosen to put them on at this time. It is, however, of the utmost importance that it has not been grazed with sheep all through the spring and summer. In most years if you put lambs, after weaning, where sheep have been grazed you are almost certain to have the hoose or lamb disease, especially in wet seasons. You always find lambs do well where thinly stocked, which I think is sufficient evidence to show the treatment they require. You will say where are we to put our lambs? Where sheep have not been is the great secret. If we have no old pasture or clover eddish, except where sheep have been grazed, we must provide other food, such as rape, mustard, early common turnips, tares, or cabbages. I have never seen lambs unhealthy on tares or rape. A run on the stubbles is always a good change. I have found them do well on old mangels. A few extra acres grown and reserved for this purpose are invaluable. I could give you numbers of cases where the lamb disease has been in a great measure prevented by this plan of providing suitable food.

With regard to medicine, many grave errors are committed. It is an easy matter to procure books to tell you what will cure this and that disease; but the great difficulty is to know—what is the disease you are trying to cure. Take, for instance, diarrhœa, a disease from which many of our lambs appear to die. What is this diarrhœa? In many cases it is an effort of nature to throw off some impurities in the system. What do many people do in this case? Begin to administer powerful astringents, thereby aggravating the disease you are trying to cure. First, remove the cause by change of food, and a dose or two of linseed oil, with a little laudanum, and tincture of rhubarb. This will in most cases set all straight, and I know no kind of good that would be so beneficial here as some “untaxed malt.” As a condiment for all stock, especially when out of health, there is

nothing equal to it. Then turpentine and other remedies are sometimes recommended with good effect. When turpentine is given it should be given in oatmeal gruel, as it mixes well with it, and is not so liable to choke the lamb. Lambs generally, when diseased, become so debilitated as to require medicine containing tonics. Just one word before I finish the subject. When the lambs are put on turnips, do not pen on too small a piece, but let them run on, say half the field at first, until they have well taken to the turnips, even if a little waste occurs. Do not use too much linseed cake or other strong food at first. A few old peas, or some Indian corn, is much better than all cake. Some good clover, hay, or malt combs are more suitable until the new year comes in. Lambs, like all young animals, cannot bear too much forcing food. I have seen two lots of hogs in the same field, one not having a great quantity of cake, the other only malt combs and clover. The lot having cake became lame in the legs and feet to that extent that in the spring they were only wrecks of sheep. The other lot, having no cake, were at least 10s. per head more valuable in the spring.

On the Cotswold hills sainfoin hay is used to a great extent, without much linseed cake. I never knew the value of fodder for sheep until I went up there in the autumn of 1854. So much importance is attached to fodder there that farmers put a stack in the corner of the turnip field, to be ready for the winter. There sheep must have fodder if the beasts go without. Here the horses and beasts get the fodder; the sheep go without. Money cannot be spent more judiciously than by allowing hogs fodder when on turnips, especially in the autumn. I like sheep to be driven up several times in the day when on turnips, and the last thing at night before the shepherd goes to bed. They are apt to lie too long, and often die in consequence, no doubt owing to the great quantity of water contained in the turnips causing an excess of urine. Some seasons, do what you will and take what precautions you may, all will not go on well; much, however, may be done in the way of prevention.

HOOSE AND BLACKLEG IN CALVES.

Hoose may be cured if taken in time. For blackleg no cure has yet been found. Both diseases may be prevented, that I am certain of. In the year 1850 I entered the farm I now occupy. Some of you will remember that it was then a rabbit warren. I had a bad lot of buildings, and was badly

off for turnips, as only a small portion of the farm would then grow them. The straw I had was so mixed with bracken that it was only fit for bedding. I had very little hay, consequently my stock was out late in the autumn.

What was the result of all these misfortunes? I lost three fourths of the calves I had reared with blackleg. The next year was nearly as bad. What now was to be done? I had many old friends ready and willing to give advice. One said, "Take your calves up at night early in the autumn." Another said, "Give them a dose of saltpetre each." "In the multitude of counsellors there is wisdom." I therefore adopted both of these plans, with a little addition of my own. I now take them up into the yards at night, not later than the middle of August, give them hay and corn, with a little linseed cake or crushed corn and bran—I say bran especially, because I believe it produces less blood than most other kinds of food, blackleg being a blood disease, and therefore requiring a check upon any redundancy of blood—and keep them in the yards until the dew and frost is off the ground in the morning. As a preventive medicine, I give them once a month—saltpetre, 1 oz.; Epsom salts, 4 oz., dissolved in hot water; then add, when nearly cool, 2 or 3 oz. of flour of sulphur. It is a good plan to fix a certain day—say the first or the last day of the month; it is not then so soon forgotten. If these precautions are taken, not one calf in fifty will be lost of hoose or blackleg. Some farms may not require these precautions. That, however, has not been my lot. I therefore continue the prevention system, and, I am thankful to say, without loss from hoose or blackleg.—*The Agricultural Gazette*.

PARASITIC DISEASES OF ANIMALS.

EXPERIENCE has recently shown that the theory of parasitic development is true, and afforded additional evidence of the influence of climatic conditions in fostering the growth of numerous lower organisms which find a congenial habitat in the tissues of the higher animals. A short history of the life of those entozoa which do the greatest injury to their host will indicate clearly that the very existence of the creatures is dependent on the moisture; and the history of the diseases to which they give rise proves that wet seasons are favorable to their existence, even in localities where they are not prevalent under ordinary circumstances.

Flukes.—Liver rot among sheep is a well-known affection, which is always more or less prevalent in wet lands, bogs, or marshes; so clearly is this fact recognised, that certain plants, which only grow in those situations, have been looked upon as the cause of the disease. Liver rot also occurs in wet seasons on pastures which are not known as “rotting lands,” but, on the contrary, are perfectly sound. It is clearly established that liver rot is due to the presence, in considerable numbers, of the liver fluke (*Distoma hepaticum*); and, reasoning from what has been observed as to the development of other varieties of the fluke, the life-history of the liver fluke of the sheep is briefly as follows:

Mature parasites (flukes) are commonly present in the liver ducts of sheep, even when no symptoms of rot are apparent; indeed, healthy, well-conditioned animals are found to harbour them. The flukes, like parasites in general, are amazingly prolific, and during their residence in the gall ducts deposit thousands, perhaps millions, of eggs, which are carried along with the bile into the intestinal canal, and thence are expelled and fall on the land along with the manure.

It will be observed that the eggs of the fluke are not hatched in the organisms of the infested sheep. If they were, the animals must in a short time be overrun with them; but before the eggs advance a step in development they must be placed under totally new conditions.

From investigations which were made by Steenstrup, Kuchenmeister, Siebold, and others, it appears that the eggs of the fluke, if they fall on a moist surface or into stagnant pools, give exit to ciliated embryos, which move about freely in the water, and after a time attach themselves to the bodies or shells of freshwater molluscs. In this situation the parasite becomes encysted, and advances a stage in structure.

The essential condition for the perpetuation of the fluke race is moisture. Falling on a dry soil, or being exposed to the sun of a hot dry summer, the eggs shrivel up and die; but finding a favorable situation, they quickly become fruitful, and furnish the larval forms of new generations of the parasite, ready to occupy the organs of warm-blooded animals which may feed on the pastures where they abound.

Rotting lands, it is easy to understand, keep up the number of flukes in the form or stage of development which fits them for a new residence, because sheep feeding on those lands, if not already infested, soon become so, and, by expelling mature eggs from their intestines into the pools and

ditches, provide an inexhaustible and constant supply of new material. Marshy land is not in itself "rotting land" until it has been fed over by sheep infested with flukes; but the chances are that, having once become contaminated, it never recovers its healthy condition.

Healthy lands become rotting lands in wet seasons, as the experience of 1860 and 1879 distinctly proves; and the fact has led to the expression of some doubt as to the true causes of rot, because it is alleged the parasites cannot be called into existence on pastures where none of the germs are present by the mere falling of the rain on the ground, and it must be admitted that it is not always easy to explain the sudden occurrence of rot under these conditions. It is, however, settled beyond all doubt that the disease does arise from the ravages of the fluke, and never occur in localities in which those parasites are not produced. Wet is an essential element for the development of the worms, and it must therefore be concluded that the germs of the parasites are often present in places where they are not suspected, and where they will remain in an undeveloped form, perhaps for a long period, unless the conditions are exceptional—that is to say, unless they are destroyed by heat and drought, or rendered active by long-continued wet, which supplies the conditions required for their growth, chiefly by affording the appropriate habitat for the soft-bodied creatures (water snails) to which they become parasitic in the first place.

All the varieties of the fluke pass through several generations before they are sufficiently mature to be introduced into the system of a warm-blooded animal, in which position they rapidly acquire sexual organs and produce an immense quantity of ova. Experiments which have been made with the eggs of the fluke prove that they are not capable of advancing a single step in the animal organism; they have been given in considerable quantities to sheep without causing any inconvenience, and the fact is clearly established that they must undergo the various changes which occur, from the issue of the ciliated embryos to the occurrence of the inchoate form of the fluke, outside the body of the higher animal. When the flukes in the larval form are introduced into the digestive organs of the animals which are feeding on the infested pastures, they probably remain for some time without giving any sign of their presence, and the sheep may be removed to other pastures, at a distance, before any indications of rot are apparent; and in such cases the ground on which they fed last commonly gets credited with the mischief. It is stated, truly enough, that the sheep

showed no symptoms of illness before they were put upon the land in question, and that almost immediately afterwards they began to fall away. This fact, however, should always be taken as a proof that the infection must have happened in some other place, as some time must elapse after the entrance of the parasites before they attain sufficient size to produce any serious effects upon the animal's condition.

At first the results are rather satisfactory than otherwise, as a tendency to lay on fat is one of the earliest symptoms of rot. Water meadows and "rotting lands" are valuable feeding grounds for butchers' purposes on this account; but it is always necessary to limit the time of feeding to a few weeks, otherwise the gain is quickly counterbalanced by by equally rapid loss. As to remedial measures, or rather preventive measures, it is impossible to say much. A season like the one which we have just had is disastrous to plants and animals, and it is useless to suggest that wet pastures must be avoided as feeding grounds for sheep, because, under recent conditions, the flockmaster has no choice in the matter. The system of sheep farming does not include arrangements for housing flocks when the climatic conditions are not satisfactory; and consequently it happens that, so far as wet seasons are concerned, the animals must occupy their usual position on the farm, and take their chance.—*Field*.

NORTH OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

THE first quarterly meeting of this Association was held in the Douglas Hotel, Newcastle-on-Tyne, on Friday, August 29th, Mr. D. Dudgeon, the President, in the chair. The following members were present, viz. Messrs. W. F. Mulvey, H. Hunter, G. Elphick, J. Corbett, A. L. Butters, A. Hunter, D. Macgregor, W. Wheatley, M. Hedley, W. S. Pringle, C. Stephenson, J. Anderson, J. Gofton, and the Secretary. Mr. W. Williams, junr., was present as a visitor.

Letters of apology for non-attendance were received from Professors Williams and Pritchard, and Mr. J. Malcolm.

The committee elected for the revision of the rules presented its report, which, with a few alterations, was adopted.

Mr. G. Elphick then read the following paper on "Some of the Diseases of the Bowels as affecting the Horse."

MR. PRESIDENT AND GENTLEMEN,—Having been solicited by our worthy secretary at the eleventh hour to read a paper, I have selected to bring before your notice some of the diseases of the bowels as affecting the horse.

I should have liked to have given you something perhaps more inter-

esting, but the notice I received being so short, and time limited, I took the liberty of thinking that one and all of you would kindly assist me in my undertaking.

You will, I am sure, agree with me that these are diseases to which the lower animals are very subject, especially the horse, but not so common now as they were in former days, thanks to science, I think I may justly say veterinary science; also to the better management and feeding of horses. I do not intend to give you an elaborate paper, neither shall I describe all the diseases to which the bowels are liable, but confine myself to the most important ones, viz. indigestion, impaction of the stomach, constipation and obstruction, spasmodic and flatulent colic.

These diseases occur most frequently during the winter months and at the change of seasons, and are generally the results of errors of feeding. Horses are, as a rule, best kept in health when fed upon food requiring thorough mastication; we find when horses are properly fed the stomach seldom suffers from disease. Give a hungry horse a feed of cooked meat or a mash which is eaten very heartily without mastication, and we get an acute case of what is generally called gripes. I have no doubt it is badly griped, and unless it gets immediate relief the case terminates fatally from a ruptured stomach. Doubtless many of us have been called in to make *post-mortems* upon horses that have been found dead in the morning which were left in perfect health the previous night, and upon inquiry the horse has been a long journey, got home late, had a mash, and was left for the night. On making a *post-mortem* the stomach is found ruptured and full of non-masticated food. In many of these cases, where no *post-mortems* are made, the poor animal gets the credit of having hanged itself.

The first disease to which I shall call your attention is

Indigestion.

This arises from various causes, such as the process of dentition, diseases of the teeth, ravenous feeding, improper food, or food given at improper intervals, or from some constitutional predisposition. In young animals it is generally caused by removal from the dam at too early an age, draughts of cold milk, or sucking when the dam is heated by working too soon after the birth of the offspring.

Symptoms.—Loss of appetite, or capriciousness and depravity of it, the animal eating at irregular intervals, or having a desire to eat filth; the tongue is white and pasty, with a bad smell, often a dry cough, hide-bound, a dry scurfy skin, stretches out the nose, and retracts the upper lips; irregularity of the bowels, and occasionally pawing with one or both fore feet; if caused by imperfectly masticated food, the oats and hay, or whatever the animal is fed upon, will be found in the fæces. The fæces often resemble the colour of the food.

In young animals the above symptoms are generally present, associated with diarrhœa, and if fed on milk the fæces often resemble it in colour and consistency, and are generally fetid. Should these symptoms in aged animals have spread over a considerable time diabetes often sets in; oolicky pains may also be present in some cases, especially a short time after being fed.

Treatment.—If possible find out the cause and remove it, this generally in the earlier stages effecting a cure; if due to the process of dentition the presence of unshed temporary teeth or any irregularity of the permanent ones should be treated by the ordinary method; if from improper feeding or bad food a complete change of diet is gene-

rally all that is required, care being taken to give food easily digested and good. In some cases where the cause in operation cannot be detected, I would recommend an alteration in the diet; in all cases where diarrhoea or constipation be present, it will be advisable to give a mild aperient. I prefer linseed oil before any other; aloes, I think, are too irritating, frequently causing colicky pains and superpurgation, which leaves the animal very weak, often taking months for it to regain its former strength. After the laxative has operated, or if the state of the bowels requires no opening medicine, I find alkalies alone or combined with vegetable tonics most beneficial, improving the appetite, counteracting the acidity, and strengthening the gastric apparatus. In some cases the alkaline treatment fails, when I have found the use of nitro-muriatic acid proves beneficial; I have also had good results from allowing the animal to eat soil, such as grass sods, or when at exercise allow it to help itself, which it does greedily. In foals and calves, I find carbonate of magnesia combined with stomachics most useful; a piece of chalk or rock salt placed within their reach often does good, in fact, they should never be without one or the other. Indigestion, when occurring in the winter and the hair is long, clipping frequently proves beneficial, restoring health in a few days after every other remedy has failed. In all cases, dieting, pure air, gentle exercise, and good grooming are to be strictly looked after, even in health.

Impaction of the Stomach

is caused by food too abundant in quantity or greedily swallowed and imperfectly masticated; this is often seen where horses are fed on cooked food. Deaths from this cause are very common. Some foods are also very dangerous for the horse, such as wheat and barley, causing deranged stomachs, laminitis, and death, and should not be given as an article of diet. I have also seen bran, when given in large quantities, prove fatal, causing impaction and rupture.

Symptoms.—Flow of saliva from the mouth, nostrils dilated, anxious countenance, eructation of gas, occasional attempts at vomition, fulness of the abdomen, colicky pains, pawing with the fore feet, keeps the head pressed into a corner, or if a stall under the manger, partial sweats, afraid to lie down, and when down lies but a short time. In the latter stages we have the peculiar catching breathing, discharge from the nostrils of the medicines we have attempted to give, walking round the box until the last, when everything seems to give way, and the animal falls, to rise no more, from ruptured stomach.

Treatment is in most cases not very successful, as we are seldom called in during the earlier stages. I have had most success with linseed oil, ammonia, or turpentine, and enemas, care being taken not to allow the animal to lie down suddenly. I have also had good results from a little gentle exercise, and if much pain was present gave the tincture or extract of belladonna by itself, or combined with opium.

I shall consider the next two diseases together, as they are closely allied, viz.:

Constipation and Obstruction.

Generally affect the large intestines, and may be looked upon more as a symptom of, rather than a disease, and result from debility or paralysis of some portion of the intestines. Animals over-abundantly fed, or kept upon food containing too much woody fibre, are more liable to suffer; in some cases the bowels are naturally torpid.

Symptoms—When arising from paralysis, one diagnostic symptom is absence of intestinal murmurs, and, if affecting the large intestines, a

dilated, non-contractile condition of the rectum when the hand is introduced; if due to impaction from errors of feeding there is general abdominal pain, the animal often stretching itself out in a similar position to that seen in the act of urination, paddling with the hind feet, whisking the tail, and keeping it close between the hind legs; at times it will stand for a considerable period apparently easy, at other times lying stretched out, for twenty minutes or even half an hour, and occasionally looking back at its flanks. There is a tendency to resist by straining the introduction of the hand, and injections into the rectum, also enlargement and distension of the abdomen; in many cases impacted masses can be felt by the hand when examining per rectum, and when the hand is withdrawn it is generally covered with mucus.

Treatment.—Constipation when arising from paralysis of the bowels is best overcome by stimulants and nervine tonics, with an occasional dose of opening medicine, and by the administration of enemas; if from a torpid state of the bowels alkalies are to be given, with occasional cold bran or linseed mash, and sparingly supplied with hay. I think, gentlemen, you will agree with me that impaction or obstruction of the bowels requires very careful treatment and a large amount of patience. We are very anxious that our patients should recover as soon as possible, and the owners are generally very fidgety, consequently we are apt to give too much medicine, and instead of our patients dying of the disease, dies of the treatment; after giving a certain amount of medicine we ought to leave the rest to nature; as a rule they are lingering cases, often extending over a period of five or six days; one case which I remember lasted eleven days, and recovered. The great danger to be guarded against is muco-enteritis and rupture of the bowels.

In these cases I have had the greatest success from linseed oil; if much pain were present have given opium or belladonna, or both together; also subcutaneous injections of morphia or atropia, or the two combined, I must say I am very partial to belladonna in these cases, as it is a laxative, relieves pain and muscular contraction. Opium is too constipating, and I think often counteracts the effects of any opening medicine that is given. I have no doubt in my own mind that when the bowel becomes impacted there is a tendency to contraction of the muscular coat of the intestines.

I remember a case of obstructed bowel which terminated fatally from a huge calculus in the rectum. In this case, no matter what I gave the animal, it got no relief until I gave a large dose (one ounce) of the extract of belladonna. It seemed to act like a charm; the pain subsided, and I heard, what I liked most to hear in these cases, intestinal rumblings, and the animal passed a large quantity of wind. This state of affairs only lasted the time the animal was under the influence of the drug. I feel confident if this had been an ordinary case of impacted bowel the animal would have recovered.

In these cases, and I think I may safely say in all cases where the bowels are affected, aloes should seldom or never be given; undoubtedly aloes in a ball is the most convenient way of administering opening medicine, and in this form is easiest given. The great objection I have to aloes is its tendency to irritation and exciting the bowels to undue action. If opening medicine is necessary, linseed oil is to be preferred. Perhaps some of you will say linseed oil is very difficult to give to some horses, and that you cannot determine the quantity they have got; with linseed oil I think you need not be particular to half a pint how much you give. I have given it in large quantities; in some cases they have almost passed pure oil, without any injurious effects. Enemas of warm

water should be frequently administered. Kneading the bowels and back-raking are very beneficial. I am confident I have saved many a life by doing this.

Colic

is of two kinds, spasmodic and flatulent. They are diseases which arise from many causes, such as improper food, change of diet, physic; when the animal has not been properly prepared, a sudden chill caused by allowing the animal when heated to stand in a draught, getting their legs and bellies wet during the winter months, exhaustion, particularly if associated with long fasting, and cold water if given to the animal when sweating after a long journey. Flatulent colic is generally due to food which easily undergoes fermentation, such as boiled corn and green food, the latter especially, if cut damp, tied up in bundles, and allowed to remain in this state until wanted; it then becomes heated, often so hot that you can hardly bear your hand in it. I have seen many fatal cases from this cause. In one case the horse had given to it half a bundle of grass which had lain tied up since the previous day; it had not eaten the half before it was attacked with acute flatulency, and died within twenty minutes from taking the first bite. I believe the *post-mortem* was ruptured stomach. Symptoms of spasmodic colic are sudden pain, endeavours to kick the belly, looks round at the flanks, and in some cases attempts to bite its sides, suddenly falls down, rolls, throws itself violently about, gets up and lies down rapidly and frequently. Whilst the spasm lasts, the breathing is hurried, and the pulse rises often to 100 or more, but when they pass away, both breathing and pulse fall to their natural standard. The fæces are sometimes hard, sometimes soft, and generally passed at the beginning of the attack; the urine is passed in small quantities, or there are frequent ineffectual attempts at urination. These symptoms, unless relieved, terminate in enteritis.

Treatment.—Knowing that the pain and spasm is the symptom of the presence of some irritant, the removal of which is to effect a cure. This is best done by administering opening medicine, combined with sedatives; when there is acute pain, opiates are to be given, and may be given in large doses; opium is generally used, and is best given in a ball. In my opinion, ordinary doses of opium in acute cases like these are like pouring water on a duck's back. I have given large doses with the greatest success; one large dose at the beginning is, I think, much better than small doses often repeated, because the longer the pain and spasm lasts there is greater tendency to the case terminating in inflammation. The large dose generally acts immediately, throws the bowels into a state of collapse, relieves the pain and spasm; the poor animal lies down and gets a comfortable sleep, often sleeping for four or five hours, waking up all right.

In one case I gave as much as ten drachms of powdered opium in twenty minutes. I gave it in two balls, the first containing six drachms, and the animal being no better, in twenty minutes, the pain being very acute, I gave the second ball, containing four drachms; even this did not put it to sleep, simply relieved the pain. The animal gradually recovered, and apparently suffered no ill effects from the large dose. In all cases, after the acute pain has passed, I usually give linseed oil, to remove any irritant, and to counteract the constipating effects of the opium. In the milder attacks I have had very good results from giving chlorodyne (four to eight drachms), made into a ball with Soda Bicarb. Of the different kinds of chlorodyne I prefer Hewlett's, it being more uniform. Those gentlemen who have not tried it I would strongly

recommend them to do so. Warm water enemas should be repeatedly administered, and hot fomentations applied to the abdomen. In all cases the bladder should be examined, and if full the catheter passed. In flatulent colic the pain is not so acute, but more constant, the abdomen is more or less distended, breathing difficult, nostrils dilated, pulse quick and feeble, walking round and round the box, frequent attempts to lie down, and when the animal does lie he does so cautiously, seldom or ever rolls, and gets up immediately. In the latter stages the extremities become cold, there is more or less delirium, twitching of the muscles, reels to and fro, and if not relieved death generally ensues from rupture of some portion of the intestines.

Treatment.—I have been most successful with linseed oil, turpentine or ammonia, enemas, and hot fomentations to the abdomen. Kneading the bowels does good, and should always be resorted to. Some practitioners recommend puncturing the colon, especially our friends across the Atlantic. This operation I have never tried.

With this, gentlemen, I ought to finish; but as many diseases of the bowels terminate in inflammation I will, with your kind permission, give you my ideas upon enteritis, concerning which I have no doubt there will be various opinions. Undoubtedly we often have cases of inflammation of the bowels which I consider are only secondary. A great many acute cases of colic are often said to be enteritis, which, unless immediately relieved, terminate in inflammation. In my opinion, when inflammation sets in, it always terminates fatally. I am open to correction, and will gladly admit my error, if any gentleman will prove to me that these cases are curable. I have no doubt there are many here who have thought (if I may be so bold) that they have treated such cases successfully. I have no doubt these successful cases have been very acute cases of colic, and have only pulled through by the skin of their teeth. Fortunately for the animal, we cannot get inside to see the exact state of affairs, but when they die we always find the bowels in an awful state, black and congested, and the exudation so great that it is often half an inch or more in thickness. These are the reasons why I contend enteritis is incurable. In all cases of inflammation we get congestion and exudation; consequently, to a certain extent, loss of vitality of the part or parts affected, gangrene and sloughing setting in so rapidly that it carries the patients off before nature gets a chance at recovery. With these remarks I will conclude.

This paper contains many imperfections, which I hope, gentlemen, you will kindly overlook. I trust I have said that which will provoke discussion, and tend to the establishment of truth. I have stated freely, and with little regard for the opinion of others, my own views of the subject. We are all prone to err, and if it can be proved that I am in any part mistaken, I shall not be loth to acknowledge it, for we lose nothing by eliciting truth."

A very animated discussion followed the reading of the paper, as to whether linseed oil or aloes was the best aperient to give in cases of diseases of the bowels requiring opening medicine, in which Messrs. H. Hunter, Macgregor, A. L. Butters, Corbett, A. Hunter, Anderson, Hedley, Mulvey, Stephenson, and the President, took part.

A vote of thanks having been proposed and carried unanimously to Mr. Elphick for reading his paper, and to the President, the meeting terminated.

G. R. DUDGEON, *Hon. Sec.*

LIVERPOOL VETERINARY MEDICAL ASSOCIATION.

THE usual quarterly meeting of this Association was held at the Medical Institute, Hope Street, on August 15th, 1879, Joseph Welsley, Esq., President, in the chair.

The following gentlemen were present :—Messrs. Morgan, Reynolds, Elam, Simpson, Stevenson, of Liverpool; Professor Walley, Veterinary College, Edinburgh; Dr. Greenway, West Derby; Messrs. T. Greaves, Manchester; B. Kettle, Market Drayton; A. H. Darwell, Merthwick; J. P. Young, Clitheroe; W. G. Dixon and F. Menzies, St. Helen's; E. Langford and John Pilkington, veterinary students; a Friend; and the Secretary.

Letters of apology were received from a number of members and gentlemen, who regretted their inability to be present owing to some other meetings of a public character being held on the same date.

The minutes of the previous meeting were read and confirmed.

Mr. T. E. J. Lloyd, Chester, was elected a member of the Association.

A letter from the Secretary of the Medical Institute, relative to a proposed donation by our Association to one of the medical charities of Liverpool, was read and discussed, when it was unanimously agreed to send a donation to the Children's Infirmary of Liverpool.

Professor Walley then read a paper on "Ammonia, its Uses in Practice, with a consideration of the Stimulative System in the Treatment of Disease."

The Professor, in treating his subject, considered it under the following heads :

- I. Toxicologically—the effects of over-doses of ammonia.
- II. Physiologically—the effects of ammonia on the system generally.
- III. Therapeutically—where administered alone or in combination with other agents.
- IV. The application of the facts relative to the action and uses of ammonia to the stimulative system in the treatment of disease generally.

Mr. Thos. Greaves, in opening the discussion, said that their thanks were due to Prof. Walley for bringing such a very interesting and practical paper before them. Ammonia had been a great favourite with him ever since he entered the profession, and he did not consider that Professor Walley had over-estimated its therapeutical value in the least, notwithstanding the very high praise which he had bestowed upon it. Mr. Greaves said that Liq. Ammoniae fort. had formed one of the ingredients of his *gripe drink* for forty-five years, and he considered that with the carbonate of ammonia you can accomplish everything that you can with calomel, viz. increased action of the secretory organs, and even purging, without producing that nausea which accompanies the administration of calomel. In low fevers in horses and cattle carbonate of ammonia is of great value, and if there is a fetid condition of the mouth accompanying any disease carbonate of ammonia given in solution will remove the fetid condition directly. He had observed, however, that after the administration of carbonate of ammonia for some time the venous blood became blacker, and in some cases animals have died from apparent syncope—in his opinion—by this darkening and thickening of the blood following the administration of carbonate of ammonia. In making a *post-*

mortem examination of such cases the arteries were found to be full of black blood. He would like to hear Professor Walley's opinion on that point.

Mr. Morgan said that he used to have great faith in external stimulation, but he did not rely on it so much now, especially in pleurisy and pneumonia. He did not approve of applying mustard even in those cases, and he could not see the force of the Professor's recommendation to bleed and apply external stimulants during a *crisis* in such cases. As to giving Liq. Ammoniae fort. in a colic draught, it required so much care in measuring the dose, and having it properly diluted to prevent excoriation of the mouth, that it was a very dangerous remedy for ordinary use; he preferred the Sp. Ammon. Aromat. In cattle practice, he said, good whiskey was an excellent stimulant, and the Professor would find that in Scotland it was generally very handy. He concluded by thanking the Professor for his very practical and exhaustive paper.

Mr. Stevenson said that while he could not but express his admiration of the paper which they had heard, yet he could not agree with the Professor in recommending that ammonia be given along with alcohol, as their physiological actions are quite opposed to each other, ammonia being given as an antidote for an over-dose of alcohol.

Mr. T. Greaves, in explanation to Mr. Morgan's remarks, said that he had experienced no bad results from the administration of Liq. Ammoniae fort.; he administered it in half-drachm doses in a pint of water, and if that dose did not accomplish the desired effect he increased the dose from half that quantity to as much again; when you excoriate the mouth, and thus stimulate the buccal and whole mucous membrane; your patient generally does well. If you mix ammonia in linseed oil it does not produce the same beneficial effects. In parturient apoplexy he considered that the carbonate of ammonia was a better stimulant than whisky. He had given as much as two ounces every hour continually for six hours together to a cow.

Dr. Greenway referred to the tendency of the human mind to rebound from one extreme to another, and in nothing was this more manifest than in the history of medicine. Fifty or sixty years ago phlebotomy was almost universally resorted to as a remedy for every kind and character of disease, and at the present time it was just as universally abandoned. He considered that this was a great mistake, and related the history of a case of bronchitis which came under his care when a young practitioner, which convinced him that phlebotomy was a remedy of great value when judiciously resorted to. In this case expectorants were tried, the inhalation of steam, and the stimulative system of treatment adopted, but with no beneficial results. He then determined to try phlebotomy, followed by the internal administration of ammonia, which produced immediate beneficial results, the patient finally recovering. He said that the blood when first drawn was very thick and syrupy, but it gradually became brighter. He said when the bronchial tubes become blocked up with gelatinous mucus the blood becomes carbonised, no air can get to it, and internal congestion follows. You relieve this condition by phlebotomy; the heart is assisted, the blood gets arterialised, the lungs relieved, and the viscid mucus is thrown out. In reference to ammonia as a general stimulant, he (Dr. Greenway) considered that, in human practice, they had a better stimulant than carbonate of ammonia in sulphuric ether. Alcohol, he said, dried up the secretions, but ether stimulated the secretory organs even better than ammonia, and in some forms of disease of the kidney, such as the "white fatty degeneration," in which the urea in blood became decom-

posed into carbonate of ammonia in the kidney, the administration of carbonate of ammonia would be inadmissible.

Mr. Welsley (the President) referred, in appreciative terms, to the excellency of Professor Walley's paper, but said that, although he could quite understand the benefit arising from the combined effects of phlebotomy and ammonia, he could not fully see the advisability of combining two such antagonistic remedies as aconite and ammonia, recommended by Professor Walley in his paper.

Mr. Elam said that it was fourteen years since he had discarded alcohol in favour of ammonia. In parturient apoplexy he had found Ammon. Carb. an invaluable remedy. He then related several cases illustrative of its beneficial effects in this disease. He said he gave as much as four ounces of the carbonate of ammonia to a cow in one draught before going down. You run no risk in cattle of injuring the buccal membrane. Referring to Mr. Morgan's remarks on external stimulation, he said that, in acute pleurisy and pneumonia, he placed great reliance on the external application of mustard in every case. He had never given aconite with ammonia, but he failed to see any reason why the action of aconite should be different when combined with carbonate of ammonia in the solid form from its action when administered with the same medicine in the liquid form. In torpidity of the bowels he had found that a ball composed of Aloes ʒj, Ammon. Carb. ʒij, and repeated for several mornings, acted very much more satisfactorily than the ordinary physic ball.

Mr. B. Kettle, in a humorous speech, related the history of a case of inflammation of the bowels in a horse, which very forcibly pointed to the beneficial effects of large doses of Liq. Ammonia. When he first saw the case he administered some appropriate medicine, and gave instructions to send him word in three hours how the horse was. A messenger came and reported that the animal was no better. He (Mr. Kettle) then prepared some ammonia liniment, to be applied to his abdomen, and a powder, which was to be administered in a pint of warm water, stating that he would see him soon after. When he arrived he found the horse standing with his tongue hanging out its full length from his mouth, and completely stripped of its mucous covering; the whole of the buccal membrane was also removed. On making inquiries as to how this was brought about, he ascertained that they had given the horse the ammonia liniment as a draught, and rubbed the powder on to his belly, adding that the pain ceased immediately after he got the draught. He (Mr. Kettle) was very much alarmed at the probable result at first; however, the case terminated favorably. As to the beneficial effects of ammonia in parturient apoplexy, Mr. Kettle said that he had given ammonia and whiskey, both separate and combined; but, under either mode of treatment, he was sorry to have to report a large *percentage* of deaths.

Mr. Welsley, referring to parturient apoplexy, said that he had been induced to try ergot; in one case he gave two drachms of strong solution in half a pint of gruel. The animal was almost comatose; half an hour afterwards she became very excited—almost mad. She continued in that state for about two hours, after which she became quiet, and finally recovered. He treated other two cases after the same manner, but both died. He then treated other two cases by the hypodermic injection of ergot, one of which recovered. Reasoning from his experience and the physiological action of ergot, he was inclined to recommend it for further trial. He said he was also very favorably impressed with the benefits likely to be derived from the intra-venous injection of ammonia in this disease.

Mr. Reynolds expressed his regret that, owing to some other public meetings, Professor Walley had not a better audience to listen to his very excellent paper. In regard to the intra-venous injection of ammonia, he should like Professor Walley to enlighten them a little more in detail as to the dose, the strength of the solution, and the general mode of procedure; and also if he thought that, in cases of blood poisoning from wounds in the feet of horses, that the intra-venous injection of ammonia would be beneficial.

Mr. Greaves said that he did not think that in these foot cases death was caused by absorption of matter or blood poisoning, but that it was due to chronic disease of the lungs or other internal organs, which existed concurrently with the injuries to the feet. In regard to the beneficial effects of bleeding, he related the history of a case of chest influenza in a horse. This animal had been ill for five days, had eaten nothing for three days. Pulse 96. The late Mr. John Lawson saw the case with him. I recommended bleeding; he strongly objected to it. The horse made no improvement, however, and on the following day I bled him, taking six quarts from him. When I told Mr. Lawson what I had done he said your patient is almost certain now to die. I saw the horse six hours later, and he looked livelier, and in another six hours his pulse was down to 86, after which he gradually improved, and finally recovered. Phlebotomy relieved the congestion that existed, and gave nature a chance. But while he (*Mr. Greaves*) admitted that a great change had taken place in our mode of treating diseases, he was also of opinion that the character of the diseases themselves had changed.

After some remarks from the *Secretary*, who expressed the hope that Professor Walley would publish his paper, the *President* called on the Professor to reply.

Professor Walley, in reply, said that he was obliged to the President for giving him the opportunity of coming to read a paper, and to the members for the appreciative reception which they had given to it. He then referred to the various criticisms and questions of the members. As to the best mode of administering ammonia or its carbonate, he (*Professor Walley*) preferred giving it in solution, when it can be done conveniently; but you require to dilute it so largely that it becomes difficult to administer in some cases. As to the reason why you cannot administer ammonia and aconite together in solution, it is because the action of aconite becomes thereby increased to such a degree that symptoms of poisoning manifest themselves almost before you get the medicine down. Potass and aconite in solution had the same effect; these agents in solution seem to favour the absorption of the aconite. As to animals dying with their arteries full of black blood after the continued use of ammonia, referred to by *Mr. Greaves*, he (*Professor Walley*) said that the continued use of ammonia would produce fluidity of the blood, and in large doses solution of the hæmato-globulin, and thus prevent the oxidation of the blood; but he was strongly of opinion that the character of the blood in these cases was due to the disease more than to the administration of ammonia. In regard to the benefit of external stimulation, referred to by *Mr. Morgan*, people get disgusted by seeing stimulation overdone; some practitioners persisting in applying irritants during the whole course of the disease. But in the early stages, or at a turning point of the disease, external stimulation is of decided benefit. You thereby stimulate the nerve centres.

The professor here related the history of several cases, where marked benefit was derived from abstracting blood, and following up that by internal and external stimulation. As to the apparent contradiction

in combining alcohol with ammonia, he said that in many cases when you give two agents which individually have an opposite effect, you get a beneficial result, such as in the combination of opium and belladonna. Ammonia is a respiratory stimulant, while alcohol is more a cardiac stimulant. The same remarks apply to the combining of ammonia with aconite. Aconite reduces the temperature, having a powerful sedative effect on the heart, while ammonia stimulated the respiratory functions. He quite agreed with Dr. Greenway that sulphuric ether was particularly useful in inflammation of the lungs, but it was inadmissible in cattle practice generally, from the odour, &c., left in the meat, should the animal require to be killed. On the other hand, disease of the kidneys was not so common among the lower animals as in man, and, consequently, there did not exist the same objection to the administration of ammonia to them. As to the doses and dilution of ammonia for the horse, he gave one half drachm of Liq. Ammon. fort. in a pint of water, or Ammon. Carb. ʒj, water Oss. In cattle you may give from three to four ounces of the Ammon. Carb. without any fear of excoriating the mouth. In giving Liq. Ammonia for colic you may almost judge of its beneficial action by its effect on the mucous membrane of the mouth. I never fear for my case when the mouth has been excoriated by the medicine. Ergot of rye is used in parturient convulsions, and might be recommended for trial in parturient apoplexy; it acts on the brain and spinal cord. As to the method of intra-venous injection, first put your finger on the vein—not too tense—insert the needle into the vein, and draw the piston. The blood will show that you are in it. You may inject from ʒss to ʒj of Liq. Ammon. fort. into the circulation; it need not be much diluted.

The characters and types of diseases change; they will assume a different character in one year from that which they assume in another. He did not, however, think that this was due to altered feeding, &c., so much as to the different constituents in the same kind of food, due to our altered mode of cropping and to our altered system of agriculture generally.

Mr. Hutcheon proposed, and *Mr. Elam* seconded, that Professor Walley be requested to publish his paper. This was carried unanimously.

Professor Walley having agreed to comply with our request, a cordial vote of thanks, on the motion of the President, was conveyed to the Professor for his excellent paper. Professor Walley having acknowledged it, a vote of thanks to the President closed the meeting.

DUNCAN HUTCHEON, *Hon. Sec.*

NORFOLK AND EASTERN COUNTIES VETERINARY MEDICAL ASSOCIATION.

THE half-yearly meeting of the above Society was held on July 8th, at the Norfolk Hotel, Norwich, under the presidency of Mr. A. H. Santy, F.R.C.V.S.

Amongst those who honoured the meeting with their presence were Dr. Jackson, F.R.C.S., of Plymouth; C. Williams, Esq., F.R.C.S., Norwich; Dr. R. J. Mills, Norwich; and J. D. Allmann, Esq., London. There were also present—Messrs. F. Low, G. G. Whincop, L. Butters,

W. Shipley, S. Smith, J. K. Gooch, D. G. Hunting, H. Newsom, T. E. Anger, R. Howard, E. Barker, T. S. Barker, and F. Gooch, veterinary student.

Letters regretting their inability to attend were read from Professor Pritchard, G. Fleming, Esq., F.R.C.V.S., J. Hammond, J. S. Bower, W. Ellis, J. D. Overed, and others.

In the unavoidable absence of the hon. sec., the minutes of the previous meeting were taken as read.

The auditors' report was next received, from which it appears that the Society is making satisfactory progress, and is in a flourishing condition, and a resolution was unanimously passed that a portion of the funds of the Association be expended in the purchase of valuable and costly veterinary instruments for the use of the members.

The annual election of officers then took place, with the following result:—President, Mr. A. H. Santy, Norwich; Vice-presidents, Mr. F. Low, Norwich, Mr. W. Shipley, Great Yarmouth, and Mr. E. Barker. St. Faith's; Treasurer and Hon. Secretary, Mr. J. D. Overed, Bedford.

The *President* next introduced the essayist, Mr. G. G. Whincop, who read an exceedingly interesting paper on "Matters of an Hereditary Nature in relation to Disease."

MR. PRESIDENT AND GENTLEMEN,—In the consideration of the subject which I shall have the honour of introducing to your notice I shall have the advantage of your better judgment in the discussion which will follow. Complete uniformity of opinion is hardly to be expected; neither is it right that each of us should view a subject from one point alone, for should the theory which we make a standpoint of be a wrong one we are all in error, and it is by the dissemination of our different ideas that results follow of practical benefit to us all. Where I fail, for I do not presume to imagine that I have been able to avoid errors of many kinds, it will be my consolation to know that better men have not always succeeded, and I claim your consideration to the faults and shortcomings that this paper may contain; however if no "seed be sown" the corn will not grow, and as we daily advance in knowledge we remark many circumstances relating to various disorders which we had left unheeded before. Without doubt the best way of obtaining an extensive knowledge of disease is to pay strict attention to the causes in operation to produce results of a morbid character that go by the name of disease, perhaps through generations. How susceptible our profession is to improvement and investigation we all know, and how hearty co-operation amongst its members is to be desired is patent to us all; many and great advances have been made in veterinary education of late years, and various schools have sprung up for the teaching of the student, still many reforms are needed before ours can be called a united profession, a unity which would be to the advantage both to ourselves and the public. We have passed through the ages of darkness and superstition, yet we wage an unequal battle against ignorance; and extensive illegitimate practice of veterinary medicine is still carried on by empirics in nearly every district.

The natural inquiry we make on subjects connected with the profession should be of a useful character, entertaining to ourselves and profitable to us in the general pursuit of our profession. We daily and hourly come in contact with something of an interesting character, and thoughts are momentarily passing through our minds capable of being matured and made of benefit to us, and yet often no trace is left behind, for the simple reason we do not accustom ourselves to dwell earnestly on

such matters, or it may be, that our daily routine of practice, and cases not always of a minor kind, drive such things from us. In turning over the leaves of a favorite author, say Shakespeare, what beauties in nature we have pointed out to us, which we then recollect to have seen, although not noted before, but now our attention is drawn to them, we view such subjects with interest of no common kind. The subject of hereditary diseases, and peculiarities, the result of breeding, is one of real interest to us, and as such will open to our inquiry. In the lower animals, as in man, we see the great resemblance reproduction produces. Shakespeare noticed this in *Titus Andronicus*. "But when the bull and cow are both milk white they never produce a coal black calf" (Act 5, sc. 1). There is hardly an organ in the body that does not give proof of this peculiarity; hereditary tendency to disease shows itself in the transmission from parent to offspring. Reasoning from analogy, in the human subject an animal that at birth more closely resembles its parent, should be found more likely to develop the peculiarities of its sire or dam, as the case may be.

This can only be explained on the supposition, that the internal organs, like the outer ones, bear a very close resemblance. We know that we can scarcely find any organ of importance which shows any signs of diseased action, but that the same is transmissible to descent. Indeed, from affections of the lungs, and brain in man, we can come to no other conclusion, but that the inner vascular structure, the blood-vessels and nerves partake of this peculiarity. Taking the subject literally, we can I think, prove that no organ or texture, however remote, is exempt from its chance of hereditary taint. Every part that is capable, or rather susceptible to deviations from the natural structure, is capable of transmission to offspring, and of producing morbid effects. One of the singular varieties of this principle is "roaring in the horse," this peculiar sound has sometimes been lost in one generation reappearing in the next, and that too most strongly marked. A variety of hereditary disease is its partial or complete limitation to the male or female of any sex, although in the horse this is not so strongly marked as in man; the operation of castration often rendering a violent and fractious animal really docile, whilst in a mare of the same breed, the natural infirmity of temper still exists. In man, we see hereditary traces of disease in whole families, and inquiries instituted have traced these various peculiarities through generations—tuberculous disease of the lungs, diseases of a scrofulous nature, and gout being especially well marked. What we may avoid in the lower animals by judicious commingling of sexes can hardly, except in special cases, in ourselves be observed.

We find yet this sound advice; the application may, however, not at all times be a matter of so practicable a nature:

"Marry

A gentle scion to the wildest stock,
And make conceive a bark of baser kind
By bud of nobler race; this is an art
Which does mend nature, change it rather, but
The art itself is nature."

What we may expect from a theory, we find strongly developed as a fact; some whole breeds of horses stand work well, others are what horsemen term "soft," and subject to very early decay.

In ourselves, disease of some important organ may exist, and be held in check by carefulness and conforming to certain habits to obviate such

a disaster; thus, a disease that would under ordinary circumstances develop may slumber for years, indeed, may never appear at all, unless some active cause is brought into operation to produce the same.

The general law is, that all bodily peculiarities tend to become hereditary, at the same time changes in structure from causes external are supposed to have no effect on the progeny, at least not in the next generation. How this would act in time it is impossible to speculate.

One of the most frequent causes of roaring in the horse is hereditary; at the same time, we understand that all the progeny of an afflicted stock will not of necessity become roarsers. Where a predisposition exists from a cause of this kind, any effect put in operation is often sufficient to bring the disease into action; as an instance, great physical exertion in young animals, or a thickening of the "mucous membrane" of the air passages as a result of inflammation, constriction, or perhaps ulceration of some of the cartilages; or an effusion of lymph, the formation of a false membrane, or even tight reining in of carriage horses, may be sufficient; all these may be looked upon as exceptional causes, and are often accompanied by "thick wind;" when dyspnoea or shortness of breath is added the animal usually suffers from a cough, and that too of a peculiar sound, "a dry, roaring cough." We find in roarsers of some years' standing a considerable difficulty in *coughing* the animal; this arises from the sensibility of the larynx becoming diminished and accompanied by "paralysis of the left recurrent nerve and wasting of the muscles of the larynx as a consequence. These horses usually "grunt," as it is termed.

As a horse advances in years, roaring not only gets worse, but animals so afflicted do not thrive so well as others, and are supposed by good authorities on the matter to be most peculiarly susceptible to disease.

The horses we find becoming roarsers are exactly the reverse of those we find affected with broken wind. Broken wind is more peculiar to short, punchy animals, with short necks and very coarsely bred, thick-set ponies, cobs, and trade horses; whilst roaring is nearly peculiar to hunters, carriage horses of high stature, long necks, and narrow chests, sixteen hands high or over. An eye of experience may almost at a glance predict animals subject to this malady. This disease, instead of having diminished of late years, is alarmingly on the increase. It has, so to speak, been growing on us. Many race horses which have won considerable stakes, and showed their power of speed on the turf by the races they have won for their owners, are roarsers. These animals finish life in the stud, and the consequence is that roaring spreads through long families of race horses, some of the progeny being too "slow" to train, or from want of staying powers; or having some infirmity to prevent their chance of winning a stake. Such animals, if mares, degenerate into hacks or cheap hunters; and if stallions, these prodigies, with their various imperfections, are used to cover the neighbouring mares for a trifling fee to the groom, completely gratifying their owner's ambition. Being handy they are readily made use of by inactive breeders, and by this means the affection can never die out.

The late Professor Spooner was strongly of opinion that two-year old racing "was the exciting cause of this disease." Personally, I have no doubt he had good grounds for the opinion he had formed; matters of this kind frequently coming under his observation.

In seventy per cent. of the *post-mortem* examinations we make, we find the larynx affected. This is real hereditary roaring; at the same time,

I do not say that the recurrent nerve may not be paralysed, and wasting of the muscles as a result, without hereditary taint. Roaring arising from a stoppage in the trachea by mechanical means having been caused by disease, as influenza, or affection of the lungs, tumours in the nostrils, may be looked upon as exceptional, although abnormal sounds are produced. Tight reining in is a frequent cause, as it impedes normal respiration. The horse works uncomfortably to himself from the unnaturally curved position of the trachea. It is by no means a pleasant sight to see these wretched animals in our great cities and towns, reined up so tightly to please the ignorance and arrogance of the well-to-do public.

The next object of importance that strikes our notice, and really the greatest of all, is the part the blood plays in the matter we have under consideration. That a fluid ever in motion should perpetuate in the solids of the body, peculiarities in structure cannot fail to strike our notice. This so-called vital fluid is certainly the support of life in the different structures of the body, for mortification soon follows when the circulation is long cut off from any part, this fluid whilst supporting the life of the solids of the body is losing its own, and to accomplish this giving of nutrition it must have motion in a circle, in the continuance of which it is supersaturated as it were with fresh living powers, having parted with its nutrition when it visited the various parts of the body. The general way of viewing this subject regarding the conditions by which this fluid is transferred from one part of the system to another, producing sometimes local excess, or even deficiency as the case may be. That there should be a natural balance, or proportion of blood to various parts of the body is certain, and that there are often deviations in circulation without being really prejudicial to an animal's life is a fact, as an instance of local inflammation arising from external causes.

The definite conclusion we arrive at is that the constitution and temperament of the offspring are very nearly allied to the parent, and that every disorder, whether congenital or acquired, adds more or less, in time, to the list of hereditary diseases. Not that an animal may be actually born with the diseases to which its sire or dam are liable. This in the lower animals is rarely remarked, although in the newly-born infant, the offspring of a consumptive mother, tubercles in the lungs are often present. In our practice, however, animals are usually born free from disease, but the predisposition of the young animal usually shows itself at certain ages, depending on the nature of the malady. Too early work is most influential as a predisposing cause. Where active exertion is required in a young animal, exostosis, enlarged joints, and a quick wear of the limbs is a result.

In splints, spavins, ringbones, curbs, dropsical condition of synovial cavities, scrofulous disease of joints, shivering, diseases of the eye, as cataract, constitutional ophthalmia, diseases of the feet generally, more especially *navicular* disease, hereditary taint may be strongly marked, but disease does not of necessity follow. When we get a morbid change in the structure of the foot, so that it becomes upright, the sole more concave, and the hoof generally of a blocky character, we find conditions, the marked effect of disease, which are nearly certain to show themselves in another generation. Again, in spavin we see cases of hock lameness of considerable importance, yet no bony enlargement: and, on the contrary, cases daily occur when we have an enlarged hock, yet no existing lameness. That this has become a disease of an hereditary character does not, I think, admit of a doubt. I do not

know how we can better consider the hereditary peculiarities of animals than by commencing with our old domestic friend the hog—the “cottage’s friend,” as he is sometimes termed, although, from my experience, the good old days of the farm labourer, the pigstye and *pighlle* of land—I use a Norfolk phrase—are nearly gone, I fear, for ever.

Dr. Pritchard relates some very interesting instances of structural changes and hereditary instincts of domesticated animals. He says: “Swine transported from Europe to America, since the discovery of the western continent by the ‘Spaniards’ in the fourteenth century, and wandering at large in the vast forests of the new world, and feeding on wild fruits, have resumed the manner and existence that belonged to the original stock.

“Their appearance now closely resembles the wild boar. Their ears have become erect, their heads are larger, and their forehead vaulted at the upper part; their colour has lost the variety found in the domestic breeds. The wild hogs in the American forest are uniformly black; the hogs which inhabit the Paramas bears a striking resemblance to the wild boars of France. The restoration of the original character of the wild boar, in a race descended from domesticated swine, removes all reason for doubt as to the identity of the stock. The restoration of one uniform black colour and the change of their sparse hair and bristles for a thick fur are facts that cannot fail to be noticed.”

A very remarkable fact relative to the oxen of South America is recorded by M. Roulin. In England the milking of cows is continued through the whole period, from the time when they begin to bear calves till they cease to breed. This secretion of milk has become a constant function in animals of the tribe; it has been rendered such by the practice, continued through long series of generations, of continuing to draw milk long after the period likely to be wanted for the calf; the teats of the cow are longer in proportion, and the secretion is perpetual. In Columbia the practice of milking cows was laid aside owing to the great extent of farms and other circumstances. In a few generations the natural structure of the parts and the natural state of the function has been restored, and now the secretion of milk in this country is contemporary with the actual presence of the calf. If the calf dies the milk ceases to flow.

This testimony is highly important by the proof which it affords, that the permanent production of milk in the European herds of cows is produced by an artificial habit continued through several generations. Again, the horses bred on the grazing farms of the table land of the Cordilleras are carefully taught a peculiar pace, which is a sort of running amble. This is not their natural mode of progression, but they are inured to it very early, and the greatest pains are taken to prevent them moving in any other gait. In this way the acquired habit becomes a second nature. It happens occasionally that such horses becoming lame are no longer fit for use. It is then customary to let them loose, if they be well-grown stallions, into the pasture grounds.

It is constantly observed that these horses become the sires of a race to which the ambling pace is natural, and requires no teaching. The fact is so well known that such colts have received a particular name—“aguillas.”

“The habit of the setter dog,” his stopping, crouching, and backing, in the pursuit of game, is familiar to us. This, by constant teaching, has become hereditary to such an extent that the first time a well-bred young dog is taken into the field it is not uncommon, as soon as he gets on the scent of the game, for him to stand and remain immovable till instructed

to proceed. This can be nothing but hereditary idiosyncrasy, and a remarkable and interesting argument in its favour.

Speaking of dogs, Dr. Pritchard relates that the breed of that animal found on the banks of the River Madeline, and which are employed in hunting the "Peccari," or "small wild hog." He says, they are attached to each other, and will hunt together, but the moment a strange dog comes in their way they will attack the same with ungovernable fury, and notwithstanding the efforts of the hunter, who at other times has perfect and complete control over them, they will immediately destroy any dog belonging to an alien race.

And the sheep, which we can only look upon as one of our most anciently domesticated animals, and in which a great variety of form exists; new breeds are being frequently formed in different counties, in which particular qualities predominate, according to the preference and judgment of the breeder. This is effected partly by crossing or intermixing races already well known; but in part, also, by selecting an individual animal from the stock, in whom some particular qualities are more strongly marked than in the generality of the same breed. In these instances the natural or congenital variety, or particular excellence in form that the animal displays, most likely for the first time, becomes perpetuated by hereditary transmission, which is a law in the animal economy.

The question of breeding animals demands no little attention from us, whether we breed a horse for the chase, for commerce or for agricultural purposes. The horse shows held in nearly every county in England have done good work by encouraging a system of rivalry, or, more properly, emulation, amongst gentlemen who have both the will and means to produce good animals of every class. I myself have known several really unsound animals to travel in this vicinity. One of the worst roarers I ever heard was a very favourite animal amongst farmers for years; they patronised him extensively because his foals were large, with plenty of bone and substance. Certainly, we have as many roarers in this country as one would wish to meet with; and until the agricultural community can be persuaded of the baneful effects of animals of this kind we are always safe to have a good number. There are hundreds of individuals who are continually increasing the quantity of horses without any idea of the necessary qualities required by the sire or dam; the result is an increase of animals that are of no real value. Some will not pay the price for first-class stallions; and many more have become tired of paying for the use of these animals with such an uncertain result; and if we take into consideration how hardly these travelling stallions are worked in the season this is not surprising, for the horse gets weary from too frequent copulation and constant travelling; the consequence is that the provisions of nature are inadequate to provide against a process so exhaustive and debilitating, and the animal becomes an uncertain foal-getter, or small weedy animals are the result.

The greater the superiority of the male over the female the more will the produce partake of his character; this, as we know, applies not only to the horse, but to the still lower animals, oxen and sheep coming more particularly under our notice. This we acknowledge in England as the most powerful means of preserving or regenerating stock. I think a great argument in favour of the sire in having a more powerful effect than the dam is, that if a she ass is covered by a horse the offspring is a mule that more closely resembles the horse rather than the ass in shape, but in height it is more like the latter. On the contrary, a mare covered by an ass gives a proper mule, which is more like its sire in form and

temper, and the dam in height and size; food and climate may modify these results, but not destroy the principles. The whole secret of our success in breeding is the well-combined introduction of original blood from the best sources, and hence our superiority.

That good horses are always worth money is a fact, that is, horses with blood, muscle, and high action. But the fluctuation in the price of horses, depending on causes wholly irremediable by the breeder, is a curious fact. A few years since horses were a scarce article; now, owing, I think, to large imports, the country is full of animals, and middle-class horses sell at a price which cannot recuperate the breeder. What we want is plenty of bone, strength, and hardness of constitution. Our aim must be to breed horses of size and power. In this part of England we are well favoured with marshes of luxuriant herbage, well calculated to produce the necessary building up of the system; and here in the Eastern Counties Norfolk has always held its place at agricultural gatherings.

In concluding this paper I can only lament the present agricultural depression. Farmers are now passing through very trying and anxious times, and they must endeavour by judicious breeding to counterbalance the low price of general produce. These bad times for farmers, as they are called, affect us indirectly as well; agriculture and veterinary science are related to each other in so near a manner.

Gentlemen, I hope that when we next meet, the agricultural crisis (as it may be called) will have passed, and agriculturists find better times in store.

The veterinary profession has been one long up-hill fight for its members. A man can never war with so contemptible a foe as ignorance. As a profession, we have tackled and routed superstition, and prejudices of many kinds are fast giving way. It is my earnest wish that our association may take a firm root, and that a cordial feeling of fellowship may exist amongst us all. As a humble follower and well-wisher to the profession that is common to us, I have to thank you for allowing me to contribute this paper for the consideration of the veterinary practitioners who have enrolled themselves members of the Norfolk Veterinary Medical Association.

This was followed by an animated discussion, in which the medical gentlemen and most of the members present took part.

Mr. L. Butters then described a case of "pelvic abscess" in the horse, and his method of operating on the same, with the result, the animal being viewed by the members in the yard of the hotel.

The *President* next introduced to the meeting his dental instruments, and demonstrated his method of extracting the molar teeth of the horse. (We are pleased to learn that a set of these instruments has been presented to the Association for the use of the members.)

A cordial vote of thanks was accorded to the essayist, with a request that his paper might be forwarded to the veterinary journals for publication; and a similar compliment to the *President* concluded a very pleasant and instructive meeting, with which the medical gentlemen present expressed their entire approval, and also their opinion that by unity of purpose and a steady application to scientific subjects, the Association would make itself heard on the great questions of the day, and particularly those which affect the veterinary profession.

Veterinary Jurisprudence.

EXPOSING DISEASED MEAT FOR SALE—PLEURO- PNEUMONIA.

LYNN POLICE COURT.

Present:—The Mayor (T. J. Seppings, Esq.), E. E. Durrant, J. K. Jarvis, and J. G. Wigg, Esqs., and Dr. Lowe.

Thomas Robert Massingham was charged by John Hall, Inspector of Nuisances, with exposing for sale four quarters of a bullock at his shop, St. James's Street, Lynn, on Friday, the 4th September, such meat being diseased and unfit for human food. Mr. Sims Reeve (instructed by Mr. Archer, Town Clerk) prosecuted, and Mr. Wilkin defended.

Mr. Sims Reeve, in opening the case, said it appeared that in August a bull belonging to Mr. George Tingay was taken ill, and was slaughtered by Mr. Henry Carver, a butcher, of Downham Market. A policeman later that day saw four quarters of the beast in the cart of Mr. Massingham, and at once came to the conclusion it was being taken to Lynn. He followed, and, later still, found the meat hanging in Mr. Massingham's shop. When he got there he found that two quarters of the meat had been disposed of. Mr. Massingham, however (he wished to do him justice), promised that the two quarters, which had been sent into the country, should be fetched back. The two quarters left were hung up amongst some others. He must admit that Massingham had acted very wisely and properly in the matter. He assisted the officer to take the meat to the Town Hall, because, as he said, it was detrimental to him to have policemen hanging about his shop. The next day one of the magistrates (Dr. Lowe) saw the meat, and he considered it so bad that he ordered it to be destroyed and buried. The Act fixed the penalty for exposing for sale meat unfit for food at £20, or a term of imprisonment not exceeding three months. It might be contended that the meat had been disposed of under some authority at Downham Market; but the law did not authorise any one to send meat to King's Lynn for disposal which was unfit for human food, and if they at Downham thought it was fit to eat, why, let them eat it themselves (laughter). It was a matter which affected not so much the rich as the poor, as it had been found absolutely necessary that food unfit for man's use should not be sold. This was a case in which if they (the magistrates) thought the defendant had acted in a simply careless manner they might inflict a comparatively light penalty; but if they thought the case was a gross breach of the Act they knew their duty. He might add that pleuropneumonia was a disease which, as it became more advanced, was communicated to the whole system; and his contention was that the animal in question was a diseased one, and that it was killed because it was diseased. The object of the Act was the prevention of this, and if the disease was found in a herd the animal affected was ordered to be killed, and the Government paid half the value of the beast.

Evidence confirmatory of the statements of the prosecution having been given,

Mr. Wilkin addressed the Court in defence, and called as a witness

Mr. Benjamin Harris Carver, who said—I am a veterinary surgeon and inspector of nuisances, and have been in practice forty years. On Thursday, the 28th of August, I went to Mr. Tingay's premises and

there saw a bull. I examined it and found it was suffering from pleuro-pneumonia, or lung disease; the beast looked in fair condition. I could only detect a very little fluid thrown out from the chest. I told Mr. Tingay I should call and report the case to the policeman. I gave an order for the beast to be slain, and directed Mr. Harry Carver, butcher, of Downham, to kill it. It was, however, killed at Mr. Tingay's, and then taken to Mr. Carver's slaughter house. My attention was not called by any one to the state of the lungs. I noticed the lungs were in the same state as we generally find those of animals affected with pleuro-pneumonia. The large lobe was partly consolidated, and there was a thickening of the pleura, with a slight adhesion. I examined the meat, and I believe it was fit for human food at the time it left Downham. Considering the quality, it was as nice a piece of meat as ever I saw. The animal was four years old. [The order for killing the beast was here put in.] I do not remember any one speaking to me while the beast was being opened. The policeman might, but I took no notice of him. I think 5s. 6d. per stone was a fair price to give for the beast. It would have been worth 7s. 6d. alive. I did not see Mr. Massingham.

Asked as to the keeping of the meat in the room, piled one piece on another, witness said it should have been placed in a thorough draft. If it were hung together, it would create decomposition in a few hours, and cause a disagreeable smell.

Cross-examined.—I have no doubt it had pleuro-pneumonia.

Are you aware that the Act says every animal dying should be buried, and do you think you can get away from that by cutting the animal's throat just as it is going to die, and then disposing of their bodies? I saw the lungs; they were discoloured. I think the animal had been labouring under the disease four or five days at the least. There had possibly been an effusion in the chest for four or five days. I do not think the blood was affected. I should not have minded eating the beef in the condition it was when it left Downham, if I could not have got better. (Laughter.)

Dr. Lowe.—Do you consider pleuro-pneumonia an infectious disease? To a certain extent.

Is there any question that the animal having its blood disorganised is unfit for food? It depends upon the state.

Mr. Sims Reeve.—It was a diseased animal; the blood was affected; was not that diseased meat? No answer.

By Dr. Lowe.—I gave an order for the sale of the carcase. I gave it to Henry Carver, and told him to make the best he could of it. He is a nephew of mine. He was to sell it as salvage for the Privy Council.

By Mr. Ward.—I intended it to be sold as human food.

Mr. Reeve.—This, at least, ought to go to the Privy Council. The attention of the Government should be called to this man's conduct.

Mr. Wilkin said he found his client had been cruelly done by some one. He should call no more witnesses.

The Court was cleared for a short time, and when the public were again admitted the *Mayor*, addressing the defendant, said that, after hearing the evidence, they were of opinion that the beast was diseased, and ought not to have been removed to Lynn; but considering the case, they fined him in the mitigated penalty of 20s., and expenses, £1 2s. 6d.



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Communications and Cases.

ROYAL VETERINARY COLLEGE.

OPENING OF THE SESSION 1879-80. — INTRO-
DUCTORY ADDRESS BY PROFESSOR T. S.
COBBOLD, M.D., F.R.S.*

SIR C. PAUL HUNTER, Bart., in the Chair.

MR. CHAIRMAN AND GENTLEMEN,—Of all the duties that fall to the lot of professors in our medical and veterinary colleges I know of none so generally distasteful to the teacher as that of having to deliver the opening address of the session. Without doubt this distaste has partly arisen from the notion that nothing can be said that has not already been better said, perhaps, a hundred times over. There is another reason. Inaugural lectures are usually expected to partake somewhat of the character of an oration. With the majority of teachers this is a very cogent objection, for it must be confessed that comparatively few professional men are sufficiently gifted to meet the purely conventional requirements of the case. In this connection it is not a little instructive to observe that the medical school, which has set the example of abandoning the good practice of giving introductory addresses, is just that very one which could, if it chose, display the rarest oratorical gifts. Almost every school has its able speaker. Who that has listened to the orations of Sir James Paget and Mr. Savory can fail to have been charmed by their style and language; yet, perhaps,

* This lecture treats especially of parasites in relation to veterinary science; incidentally referring to the Alfort veterinary school, and to cases of cattle poisoning by plants in Brittany.

and speaking from my own recollections, the late Professor Miller, of Edinburgh University, was unequalled in point of eloquence. When Mr. Mitchell Henry, M.P., was surgeon to the Middlesex Hospital he delivered, without note, one of the most profound opening discourses that was ever listened to in the metropolis; yet, in the matter of oratory, I do not think that many have enjoyed a greater treat than some of you experienced in this theatre at this time last year.

But there is another aspect in which this question, as to the value of inaugural addresses, may be viewed; for however much we may envy or admire the special gifts to which I have alluded, yet many hold that, for all practical purposes, the humbler efforts implied by the written discourse sufficiently meet the exigencies of the occasion. By this more commonplace method it is apparently easier for the lecturer to offer, be he so minded, a general survey of the work of professional education that has lately been done, that is actually being done, and that yet remains to be accomplished. But you will say, "Who is sufficient for the task if all the departments of veterinary science and art, for example, are thus to be passed in review?" Clearly, not one of us. In my judgment it is neither fair nor fitting that any professor should be expected to do more than pass in review the subjects which it is his especial prerogative to teach. In this way the tedium of annual and threadbare repetitions is avoided, whilst in the course of a very few years the actual, real, and evident progress of any given institution is more or less faithfully registered. This confession of faith on my part is intended to render a double service. Whilst it offers in part an apology for the method now adopted, it also serves to prepare you for the very simple details which follow as a logical expression of the view entertained.

In the discourse delivered in this theatre in 1873 I urged upon the practising members of the veterinary profession greater attention to the parasites and parasitic diseases of animals, and in the following year I published a small manual, with the double view of aiding the student and starting fresh inquiries. Dr. Tommasi, of Florence, was good enough to produce an Italian version of this book, which has been found useful in the veterinary schools of his native country.

On the occasion referred to, knowing that I was only acting in perfect accordance with the expressed wishes of the Governors of this institution, I also spoke freely of the necessity of a more practical acquaintance with British

plants, especially with such as either represented good forage or were known to possess poisonous qualities. From an educational point of view the importance of Botany was recognised by every one connected with the college, including many leading practitioners, who, apart from purely professional considerations, desired the advancement of their sons and future pupils in general culture. In regard to the parasites, however, you must allow me to state that its practical importance was not generally recognised; and even at the present hour the bearings of helminthology in relation to the saving both of human and animal life is by no means fully appreciated. If in this matter I appear to some to assume too much the character of a special pleader, my apology is that frequent investigation, extending over a period of thirty years, has laid bare results that ought not to be ignored, even by those who are content to take the lowest view of the aims and objects of veterinary science. When one reflects on the prodigious advances which this department of biology has made in relation to state medicine and the public health I am gratified at the thought of having contributed my mite to this not altogether unrecognised good; but, in relation to veterinary sanitary science, much more remains to be said, especially in connection with the work done during the last five years. That the appeal made on the occasion before referred to was not unproductive in results is sufficiently proved by the fact that I have in the interval been favoured by a correspondence with veterinary practitioners which, taken as a whole, may be fairly called voluminous. To ensure the advancement of applied science co-operation is absolutely necessary, and, therefore, it need not surprise any one to learn that the assistance thus received has proved of the highest value. By this aid multitudes of facts bearing upon the etiology of epidemic disease were brought to light; and, what perhaps some may regard as of higher moment, not a few other facts were of special clinical value. Whenever the communications appeared to me to throw conspicuous light on the causes of epizooty I lost no time in publishing the facts; but, since some correspondents appear to have thought that their manuscripts suffered neglect, I wish to say that at times it was impossible for me to fulfil all their desires. My medical friends have been just as persistent in their demands upon my time, one correspondent sending me a manuscript which it took me just six weeks to peruse, revise, rearrange, divide, and see through the press in three separate periodicals. I need hardly add that this sort of occupation leaves one little time for original investiga-

tion; but, letting that pass, what I wish to show is how zealously this subject has been taken up by practical men, and how completely their action demonstrates that veterinary science is making more progress in this country than is generally supposed. I would that this task had fallen to the lot of others than myself, for to convince people nowadays it is not sufficient that you make one honest statement, and be done with it. Such is the measure of scepticism and suspicion that abounds, that you must add "line upon line and precept upon precept" until a wholesome conviction of the truth is produced by the sheer weight of your unanswerable array of facts.

Among the foremost of my correspondents in helminthology was Professor Williams, of Edinburgh, who, on the 14th of March, 1873, called my attention to certain nematoid worms infesting the walls of the intestine of a pony. At first I regarded these parasites as new to science, but afterwards found that they merely represented one stage of growth in the life-history of the four-spined strongyle. The matter, however, did not rest here, for Professor Williams's communication was soon followed by many others, until at length our efforts were supplemented and rewarded by the remarkable "finds" of Mr. Rees Lloyd, of Dowlais, Glamorganshire. The numerous letters and specimens received from Mr. Lloyd, recording facts of the most interesting kind, enabled me to declare with certainty that in *Strongylus tetra-canthus* we had one of the most destructive parasites that had ever come under the notice of the scientific world. Not only so, Mr. Lloyd's observations proved that we had here discovered one true cause of extensive equine epizooty; and, more than this, fatal outbreaks in other districts than the one thus involved were also found by him to be due to another and distinct form of parasitic disease. Foreign writers have already acknowledged the value of these discoveries, and thus, in at least one direction, hippopathology has received a new and recognised impulse.

I have adduced the foregoing instance as fitly illustrating the advantage of co-operation in the promotion of veterinary science; but I should be wanting in courtesy did I not also mention that not a few links in the chain of evidence were supplied by the examination of specimens sent by Mr. Cawthron, of Hadlow, near Tunbridge. These parasites were recognised by Mr. Cawthron as the real cause of wasting disease in one of his patients; and in the little pill-like masses of faecal matter by which some of the parasites had surrounded themselves I recognised a provision for the final

transformations of this entozoon, accompanied by ecdysis. Obviously, I cannot now pass in review the mass of scarcely less interesting facts supplied by other correspondents in the profession. I must, therefore, only further say, as regards equine parasitism, that my acknowledgments are also due to Messrs. Storrar, of Chester; to Mr. J. A. Clarke, of March, Cambridgeshire; to Mr. John Gerrard, of Market Deeping, Lincolnshire; to Mr. G. W. Evans, stationed at Aldershot; to Mr. John Moore, of Hendon; to Mr. G. Poulton, of Coggeshall, Essex; to Mr. George Goodacre, of Kettering, Northamptonshire; to Mr. W. R. Bryan, of Londonderry; to Mr. T. W. Whitney, of Shepton Mallet; to Mr. William Lewis (assisting Mr. Edwards), of St. Alban's; to Mr. Lepper, of Aylesbury; to Mr. A. B. Medd; and to a large number of other old pupils, amongst whom I must particularise Mr. Coupe, of Stoke-upon-Trent; Mr. George Wilkins (whose numerous and valuable contributions have enriched our museum), Mr. Awde, Mr. South, Mr. Butters, and Mr. J. B. Wolstenholme, who supplied me with particulars of a remarkable case of rupture due to parasites.

One of my most active correspondents all along has been Mr. Spooner Hart, of Calcutta, who has forwarded numerous parasites taken from solipeds, as well as from other animals both wild and domesticated. His "finds" and observations respecting the large mouth maw-worm of the horse are especially noteworthy; but in this connection I must also make my acknowledgments to Mr. Charles Percivall, of the 11th Hussars, who also forwarded from Umballa, in the Punjab, some choice examples of these singular stomach worms, along with the tumours which their presence occasions. Staff Veterinary-Surgeon Thacker, of the Madras Army, long ago sent me a series of flukes from the elephant, and in 1875 Mr. F. F. Collins, Officiating Principal Veterinary Surgeon in the Bengal Army, transmitted a rare "find" of equine amphistomes. Although these were the first specimens of the genus that I had seen from the horse, it appears that Mr. Collins' discovery was anticipated by Mr. Edward Stanley, who five or six years previously had sent similar parasites to Professor Simonds. Practically, it is of little moment with whom their original discovery rests, but it is something to the point to add that there is every reason to believe that these entozoa are capable of producing severe symptoms in their bearers. These amphistomes, or masuri, as they are called in India, have since been found in the elephant, and also in man himself; but on this subject I can do no more than allude to the fact that I have already made

public the various communications that I received from General Hawkes and Veterinary-Surgeon W. S. Adams. The last-named gentleman dissected several of the elephants which perished in the epizoöty of Secunderabad in 1874—75. In this connection I must likewise acknowledge my indebtedness to Mr. Frederick Smith for an opportunity to examine masuri and soorti (*Ascarides*) taken from elephants that died at Sanger's Circus in this country. Without prejudice to the legal question (as to "soundness" at the time of purchase) I have no hesitation in expressing my belief that the animals perished from the injurious action of these parasites. Mr. Steel and myself examined the carcass of one of the elephants with great care, when we found the amphistomes perfectly fresh and of a bright rose color.

From outside the ranks of the veterinary profession I have received a vast number of communications relating to diseases of the horse; but as it is neither possible nor desirable for me to attempt to do justice to them here, I will only add that in addition to the eye-worms transmitted by Veterinary-Surgeon Hammond, Madras Army, by Mr. Spooner Hart, by Mr. Haydon Leggett, of Luton, Bedfordshire, and others, I also received an example from the Rev. Horace Waller, of Zambesi fame. This was removed from a horse in Assam, where the parasite is very common. Lastly, the mention of these eye-worms recalls to my mind an alleged curious instance of parasitism in the brain of the horse, for the particulars of which I stand indebted to Mr. William Shipley, of Great Yarmouth. The facts are supported by the evidence of two other practitioners. All I can venture to assert is that the entozoon sent to me for identification was certainly the larva of a species of *Hypoderma*, very similar to another species (*H. Loiseti*) which a distinguished pupil, Mr. Percy Gregory, had removed from beneath the skin. The maggot in Mr. Shipley's case was found embedded in the choroid plexus, my informant being positively "certain that it was there during the life of the animal."

Having said thus much in reference to the parasitic disorders of the horse, you will not expect me to dwell with equal emphasis on the helminthiases of other animals. Did time permit I should be quite willing to say something in reference to those disastrous epizoötics, severally and more familiarly known by the names of "husk" and "lamb disease." I beg you to bear in mind, however, that my present object is not to make a scientific communication for the

benefit of agriculturists and stockbreeders, but rather to testify to the rare activity of the profession in the matter before us. I must also so far take you into my confidence as to admit that yet another motive remains behind. It is this. I earnestly hope to be able to show that the value of this institution to the veterinary profession, and through the profession to the public, is not to be measured alone and merely by the lecturing, the general teaching, and clinical work actually done within the walls of the college itself.

In reference to inquiries made in connection with the parasites of cattle and sheep, I have been favoured with more or less instructive communications or specimens, usually both, from Professor Walley, of Edinburgh; from Mr. William Jackson, Veterinary Inspector at Sheffield; Mr. John Bryce, of Stirling; Mr. L. Butters, of Norwich; Mr. Awde, of Winston, near Darlington; Mr. George Rugg, of Sittingbourne (through Professor Simonds); Mr. Shipley, of Yarmouth; Messrs. Taylor and Jarvis, of Burwash, near Hawkhurst; Mr. J. E. Cross, of Mardol, near Shrewsbury; Mr. Blakeway, of Stourbridge, Worcester (through his son); Mr. Streacey, of Dublin; Mr. Page Wallace, of Cambridge, and Mr. Frederick Adsetts, of Derby. Other communications specially referring to the parasitic bronchitis of calves and sheep were received from Messrs. Farrow, of Durham; from Mr. Chambers (assisting Mr. Blunsom), of Cirencester; from Mr. Charles Gray, of Kibworth, near Leicester; from Mr. A. W. Leany, of Tisbury, near Salisbury; from Messrs. Horsley, of West Horsley, in Surrey; and from Mr. J. P. E. Smith (through Professor Flower, of the Royal College of Surgeons, and the late Dr. Gray, of the British Museum). On the general subject of "lamb disease" I have also been favoured by a communication from Mr. J. T. Duncan, V.S., of Godwich, Canada, requesting special explanation respecting my published statements as to the etiology of the various disorders thus named, or rather misnamed. In this connection I may also add that I have received contributions and information from several members of the medical profession, both at home and abroad. Amongst these I may particularise the names of Dr. Bree, of Colchester; Mr. Ellis, of Gloucester; Dr. Bancroft, of Brisbane; and the lamented Dr. Rowe, of Victoria, to whose communications I have so frequently referred in published papers.

Of late years a remarkable degree of attention has been paid to the study of canine disease, many of which, hitherto obscure as to their cause, turn out to be due to parasites.

I may say, at least of our recent pupils, that they take a relatively greater interest in the helminths of dogs than in those of the more important animals. When incidentally conversing with people on this subject I have been not a little amused at their statements respecting the advice they have received from persons practising in that flourishing branch of the healing art known as "canine practice." Believing that many unqualified practitioners (ignorant alike of the anatomy, physiology, and diseases of dogs) succeed in imposing upon the public, I think it both a praiseworthy action and good sign on the part of the junior members of the veterinary profession that they have taken up this study so warmly. As regards parasites, there is no animal that plays such an important rôle as the dog. It is this much-loved household pet that harbours an entozoon, the larvæ of which prove fatal to one sixth of all the people who die in Iceland; and many years have passed since, at a meeting of the British Association for the Advancement of Science, I publicly expressed the opinion that annually several hundreds of persons fall victims to the same parasite in the United Kingdom. A proportionately greater number of persons perish from the same cause in our Australian colonies, let alone the injurious action of these parasites upon animal life. From various considerations, therefore, the canine entozoa, and their allies infesting other carnivora, demand attention. On this subject I have received more or less generally interesting communications from Mr. J. Roalfe Cox, of Mount Street, Grosvenor Square; from Mr. Harry Olver, M.R.C.V.S., of Tamworth; Mr. Charles Moir, of Cardiff; Mr. Charles Taylor, of Nottingham; Mr. Lewis, at St. Alban's; and from many other former students, such as Mr. George Goodacre, of Kettering; Mr. Richard Morgan, Mr. William Cooper, Mr. A. Nunn, Mr. E. E. Batt, Mr. H. J. Kelly, and Mr. J. T. King, of Bournemouth. The last-named contributor has recently sent full-grown nematodes from a puppy only one month old, and also some "worms removed from the eye of a dog."* On the very special subject of canine hæmatozoa, including the heart-worms which prove so fatal to dogs in China, Japan, and elsewhere. I have been favoured with much information from medical friends and others—one of my

* Since the delivery of this lecture I have carefully examined Mr. King's specimens, or rather specimen. The single filament or shred of organic matter in the bottle gave no unequivocal evidence of nematode structure. Its thorough decomposition was attested by the abundant presence of mycelial threads, conidia, and sporules of a fungus.—T. S. C.

most active correspondents being the late Mr. Robert Swinhoe, formerly H.B.M. Consul at Amoy, China. In this matter I am specially indebted to Mr. Walsh, the well-known authority on dogs, and editor of *The Field* newspaper. One of the most remarkable specimens at present in the College Museum was given to me by Mr. Walsh, who received it from Mr. J. Julius Dare, together with interesting particulars from Mr. Dare himself, from Dr. Orton, and from Surgeon Hadlow, of the Royal Navy. I have also received either specimens or communications on this subject from Dr. Wykeham Myers, who is stationed at Chefoo, North China; also, quite recently, from Dr. John R. Somerville, of Pagoda Island, Foo-chow-foo, China; from Dr. Manson, of Amoy; from Dr. Lewis, of Calcutta; from Dr. Bancroft, of Brisbane; from Dr. J. A. P. Silva Araujo, of Bahia, Brazil; and from Mr. Benjamin McInnes, of Dick's Edinburgh Veterinary College, who is practising at Charleston, South Carolina, U.S. Lastly, in reference to the parasitic bronchitis of dogs (the discovery of which appears to be due to certain members on the staff of the McGill Veterinary College, Montreal), my thanks are especially due to Professor Osler, M.D., and to his colleague, Dr. Røddick, who brought us a preparation, which is now deposited in the College Museum. It shows the newly-discovered parasite *in situ*. In reference to the general subject of parasites, I had some time previously received a communication from Professor McEachran, the Principal of McGill College.

If I were, with anything like fulness, to extend this record, acknowledging gifts of specimens of parasites removed from other animals than those above mentioned, I fear I should exhaust your patience. Many of the so-called "worms" taken from birds, reptiles, and fishes, however, possess a practical interest far beyond that which you might at first sight suppose. I have received large donations of this kind from within the ranks of the veterinary profession, and still larger from without; but in this relation, without going into details, I can only further add my thanks to Mr. George Farrow, Mr. D. M. Storrar, Mr. G. Wyer, Mr. William Hardcastle, of Ely; Mr. G. F. Davis (through Mr. Steel), Mr. J. Byerley, of Seacombe, Cheshire; Mr. Short-house, Mr. H. Moore, Mr. J. H. Keene, and Mr. Hedley. I need hardly say that my colleagues have in various ways promoted helminthological inquiries, and in the matter of donations to the entozoological collection our thanks are especially due to the principal of the College, to Mr. Avis, and to Mr. Steel. One more word and I have done with the

parasites. It is too much the habit of mere onlookers to throw cold water on the sincere efforts of honest-minded persons; and in effect, if not exactly in the same words, some of these outsiders have said, "What is the use of all this fuss about a set of miserable parasites?" Gentlemen, there are parasites and parasites; and I freely admit that in dealing effectually with some of the higher types one often encounters serious difficulties. However, in answer to the cry above mentioned, I will quote a few lines from one of the junior veterinary practitioners, and this must, if you please, do duty for the many other similar assurances which I have received at the hands of old pupils. Of course it would be a breach of confidence to mention this gentleman's name, and I must ask you to make some allowance for that measure of self-assertiveness which is perfectly natural and allowable in a private communication. Speaking of parasitism in relation to veterinary work, he says: "I can testify that, during the five years I have been in practice, the knowledge I gained at the college has been of great practical service to me, and on many occasions has proved to my clients my superiority over much older practitioners, whose indifference on the subject has led them to neglect the same."

Let us now turn to certain other matters. Here I must needs be brief, for our time is limited. It has been said, over and over again, and in my hearing, that the veterinary student has no enthusiasm, no ambition, and no desire to excel in the higher branches of his profession. He comes here so saturated, as it were, with the purely business or commercial aspects of his calling that it is not possible for him, in the fact and face of such antecedents, to emulate the intellectual performances of the sister profession. There is some truth in the statement; but when we see, as, I think, governors, professors, and practitioners now actually do see, marked signs of activity, the inference is that that degree of progress is being made which is most consistent with stability. It should be borne in mind also that, considering the known disadvantages to which we have referred, the greater is the credit that redounds to those who are industrious and successful. I have been told by Sir Frederick Fitzwygram that the examiners generally have reported fair progress of late, and from one of their number I have received written assurances to the same effect. But some think that there is another and better way of estimating the value of this College as a teaching institution. They will tell you that you must compare our doings, and especially our general

resources and infirmary appliances—pharmaceutical, clinical, and sanitary—with those of other colleges in Europe and America. By all means let this be done. Except in the matter of parasites and botany I cannot pretend to know precisely how we stand. As regards the measure of means and the time devoted to these latter subjects at the Alfort Veterinary School, my recent visit to that large establishment has given me some very useful information. I shall speak of this immediately. Naturally I am reluctant to refer to other departments than my own, and there is the less need that I should do so, since our chairman has so recently visited the College, examining it much more fully than I had opportunity to do. In what little I have to say Sir Paul Hunter will kindly correct me if I am in error. The first thing that strikes one is the ample space occupied by the school buildings and grounds. Being a Government institution, and far removed from Paris, there was nothing to prevent the erection of a suitable college for resident pupils. The residents (*les élèves internes*) are both comfortably housed and fed, and they enjoy other social advantages not shared by the non-residents (*les élèves externes*). A chapel for religious worship occupies a conspicuous corner of the grounds. The class-rooms, chemical and physiological laboratories, and pharmaceutical offices are all on an ample scale. The museum is very large, and kept in perfect order. The collection not only comprises preparations of healthy and morbid anatomy (being particularly rich in diseases of the osseous system), but it contains a large number of natural-history specimens, extending to birds, reptiles, fishes, and even minerals. In the botanical department bundles of cereals and grasses are displayed in glass cases, much in the same way as they would be in a seedsman's shop. As to the internal parasites, they are comparatively few in number, and I missed several important and characteristic species. Monsieur Trasbot gives some lectures on the subject of parasites. It was this gentleman who, not very long ago, denied the existence of measles in beef, although Professor Simonds and myself reared *Cysticerci* in cattle at this College fifteen years ago; and every year since 1872 I have exhibited the parasites to pupils in this theatre. It is to be feared that Professor Trasbot has failed to inform himself as to what has been done by German and English investigators, to say nothing of the subsequent confirmatory experiments made by one of his own countrymen, namely, Professor St. Cyr.* Unfortunately, Professor Colin was

* See my Report in the *London Medical Record* for July, 1874, p. 472.

from home, so I lost the opportunity of seeing the large cabinet of choice specimens of entozoa which he is said to possess. As regards external parasites, I was particularly struck with the preparations of skin disease, showing the injurious effects produced by bots, mites, and lice, as the case might be. Passing through the grounds nothing surprised me more than the large amount of space devoted to the cultivation of plants. My colleague (Mr. Steel) was struck with the same feature on the occasion of his visit. One considerable enclosure is occupied with cereals and useful forage herbs, whilst another and far larger space is devoted to the culture of plants arranged according to the natural system. Clearly, so far as examination requirements are concerned, the Alfort pupil has a great advantage over our own students. Book in hand, he can at any available moment walk into the grounds and get up his subject. Practically, however, and in view of the possible requirements of after-life, I take leave to doubt whether information gained in the best-arranged garden is of equal value to that acquired by demonstrations in the fields. It is surprising how different the grasses look in the meadow and hayfield to what they do in the scientifically arranged garden. Looking to the simple requirements of the veterinary scholar, I think our method the better of the two, and all-sufficient for the ultimate purpose held in view. Perhaps in the matter of poisonous plants we have not an equal advantage, since comparatively few of them are to be found growing wild in the immediate neighbourhood of London. It might be a useful adjunct if our public gardens gave up a trifling space for the separate cultivation of indigenous poisonous plants. The Alfort student can not only see many of these noxious species in the college grounds, but within less than an hour's ride he can visit the large collection in the *Jardin des Plantes*. This garden, as every one knows, is open to all without any sort of restriction, and special labels, having black borders, effectively indicate the poisonous species of plants. Other coloured labels point to their special utility for medical, economic, or ornamental purposes, as the case may be. Of course, none of these collections are kept up to a perfect standard of excellence, any more than obtains in the case of the Regent's Park Gardens; and, considering the difficulties attending the preservation of water-plants especially, this is not to be wondered at.

Did time permit I might say a great deal on the subject of plant-poisoning. I will only bring forward a few facts that can hardly fail to prove generally interesting. During

my recent visit to Brittany, where I spent nearly two months, I made the acquaintance of a highly cultured veterinary surgeon, M. Barrier, Chief of the Army Establishment, known as the *Dépôt de Remonte de Guingamp, Côtes du Nord*. M. Barrier (whose son is Professor of Natural History at the Veterinary School of Toulouse) brought under my notice a remarkable instance of alleged cattle poisoning by cowbane (*Cicuta virosa*).^{*} This, he said, occurred last September at Carhaix, Finistère, near the Black Mountains.† At Guingamp, on the banks of the river Trieux and its tributaries, I noticed everywhere an extraordinary abundance of *Ænanthe crocata*, and in adjacent localities I found plenty of the true hemlock (*Conium maculatum*). Making my way, three weeks later, to the hill country, I stopped for a fortnight at the small town of *St. Nicolas du Pelem*. Here, again, on the banks of the Blavet and other streams there was a profuse abundance of the common dropwort (*Ænanthe crocata*); yet, although I encountered six other species of Umbellifer, I looked in vain for *Cicuta*. On one occasion, in this neighbourhood, I saw a cow demolish a small plant of dropwort, and on making inquiries I learned that a local proprietor had lost about thirty animals from this cause during the last few years. The people were, however, quite uncertain as to the particular species which poisoned the animals. Having shown Mons. Pommeroy, one of my informants, the plant which I believed to be at fault, he, at my request, repeated his statements briefly in writing. These are his words:—"M. de Lescurn, Proprietor at, and Mayor of St. Tréphême, living in a chateau on the border of the river Blavet, has lost there in the last four or five years thirty cows which had eaten of the herb of which you speak." Shortly afterwards I proceeded to Carhaix, where I hoped, not only to find the true cowbane, but to gather further particulars respecting the poisoning cases mentioned by Mons. Barrier. In the latter desire I was not disappointed; yet here, again, on the borders of another river, the Aven, I searched in vain for *Cicuta virosa*. Mons. Barrier had led me to understand that only thirteen animals had partaken of this plant, and of these no less than eleven perished. At Carhaix itself I heard a very

* M. Barrier also read me a letter from his son, in which an avian epizooty, affecting pigeons, was described as due to *Ascaris maculosa*, and I explained to M. Barrier that I had already described a similar outbreak in England some years back ('Zoological Society's Proceedings,' 1873).—T. S. C.

† Here the lecturer pointed to a large map of Europe, specially indicating the positions of Guingamp, Carhaix, and St. Nicholas, in Brittany.

different story ; for there the notary, Mons. P. Le Falc'hier, informed me that there were last autumn three distinct sets of poisoning cases in the neighbourhood ; one in the village of Little Carhaix (which is probably the instance referred to by M. Barrier) ; another in the village of Croasmir (the animals belonging to a cultivator named Joseph Dantee) ; and another in the village of K'garion (the victims belonging to M. François Conau). He could not tell the exact number of animals that died, but, taken altogether, it considerably exceeded that which the single set of cases implied.

I have given these few particulars, not merely on account of their general interest, but also, partly, because I wish to amplify, likewise to correct, the short notice which appeared in the *Veterinarian* for August, and, more especially, because the cases do not appear to have been published ; at least I was so informed. Further, in reference to what I was saying a little while ago as to the difficulty of keeping large collections of living plants in perfect order, I may observe that neither in the Alfort Gardens, nor in the *Jardin des Plantes*, nor in the exquisitely kept Botanic Gardens at Rennes (in which, through the introduction of my friends, M. Bagot and Professor Sirodot, Chief of the University there, I spent several pleasant hours), was there a single living specimen of cowbane to be seen. Two of the above-mentioned gardens showed stunted and imperfect specimens of the water dropwort (*Ænanthe phellandrium*), but the spaces occupied by the labels of the common dropwort (*Æ. crocata*) were plantless. In the great Parisian collection there was no black border to indicate the fact that the species last named was really poisonous. On the whole, as regards the Brittany poisoning cases, I am inclined to think that they were all due to *Ænanthe crocata*, the virulence of which is generally recognised. In my former address allusion was made to the comparatively recent English instance, in which no less than forty-three oxen perished.* It will not be altogether out of place if I mention another curious experience. At Carhaix itself, a place of nearly 2000 inhabitants, I learned that the nearest veterinary surgeon lived at Morlaix, upwards of twenty miles distant. I was further told that there was little call for the professional man's services, since it was the custom of the less cultured proprietors, by payment of a small sum, usually ten francs, to secure the services of the

* See *The Lancet* for June 28th, 1873 ; and also for September 20th, 1873, (p. 441). For further references consult also Dr. E. J. Waring's recent classical work ('*Bibliotheca Therapeutica*,' vol. ii, p. 502), where the memoirs of Bloc, Gayet, and Pickells are quoted.

priest. Masses were said in favour of the animals suffering from all manner of diseases, including epidemics and injuries from poison. When on the road to Carhaix my Breton coachman pulled up at a wayside chapel and dropped an offering into the strong box, in view of securing the favour of the patron saint of horses. Bundles of horse-hair in the form of tails lay scattered on the floor of the little building, testifying alike to the faith and simplicity of the peasantry. Here is a state of things at which you may cry *cui bono* as much as you please, but the uniformly kind and devout peasant proprietor is perfectly satisfied with this *ancien régime*, and for him all the modern scientific appliances and advances in the veterinary art remain of small moment. I make this remark in no reproachful tone, for I fancy that somewhat similar experiences are occasionally encountered in remote parts of the United Kingdom.

To conclude ; whatever the opinions of individual teachers amongst us may be, I believe that we are all equally animated by a common desire to advance our pupils' interests, and beyond this I think it has been shown that there are a thousand and one little services which it is in our power to render to the profession, quite apart from the ordinary College work for which the staff is salaried. The small services of which I speak may appear trifling in themselves, but taken collectively their performance consumes a large amount of valuable time. As a science examiner, and for fifteen years a teacher in two of our metropolitan medical schools, to say nothing of my previous official connection with the Edinburgh University, where, as Curator of the Anatomical Museum, I gave lectures on comparative anatomy to large bodies of students, I am in a position altogether exceptional, and therefore, perhaps, well fitted to compare the work of this College with that done in the schools of my own profession. The professors in the medical schools have no governors to legislate for them, but that is by no means an unmixed good. Complete freedom and independence is liable to abuse. For example, I once refused a certificate to a medical student because he had only attended one lecture on botany throughout the whole course. The victim of my conscientiousness thereupon appealed to the Dean of the Faculty. That official, without consulting me, accepted the pupil's assurances and at once signed his certificate. Shortly afterwards my young friend passed the Apothecaries' Hall, triumphantly snapping his fingers at my churlishness. That sort of thing will not do here, neither would it do at the French veterinary schools. At Alfort the discipline is exceedingly strict. When I privately mentioned that rude inter-

ruptions were occasionally witnessed at the botany class room of the Royal Veterinary College I was given to understand that such conduct would not for an instant be tolerated at the great republican establishment. To be sure, the French student is naturally polite, and it is therefore, perhaps, comparatively easy for him to exercise the necessary self-restraint. That, however, does not lessen the offence here, and I sincerely hope I may never again have occasion to allude to it.

Gentlemen, through good report and evil we shall continue our anxious duties. Sooner or later the time must come when each one of us, in his turn, will exhibit frailties more or less common to humanity. Then, if you please, exercise forbearance in your criticisms. When that day arrives, it may possibly be remarked in your hearing that such and such a professor is, speaking figuratively, "only fit for the knacker." The observation may be just enough in itself, but you will do well to remember that, like some good old roadster, on whose case you may have recently pronounced, the professor himself was once young. Then it was that he did full justice to his curriculum and bore bravely the heat and burden of the day. Think of his past performances. Honorably minded, he is sufficiently pained at the thought of not being able to accomplish all that he did in former times. You do not point the finger of scorn at Blair Athol because his market value is less than half what it was in his palmiest racing days. No! let us be just towards one another. As with the teacher, so with the taught. Each one in a measure carves out his own career, but that career may be modified by circumstances over which he has no control. Put your shoulder to the wheel; go forward; and whether life be short or long you will not fail to leave behind you a clearly defined record of usefulness. Assert your rights in hard cash, but do not allow the commercial spirit to mar the higher aspects of your calling. Strike for self-respect, and show by your manly attitude that you have a withering contempt for all forms of sycophancy and humbug. By all you hold dear to you avoid intemperance, but remember that it is possible to be sober without becoming a downright fanatic. Work, gentlemen, work! "Work while it is day, for the night cometh," when no toil can be performed.

SYNOPSIS OF CONTINENTAL VETERINARY JOURNALS.

By JOHN HENRY STEEL, Demonstrator of Anatomy at the Royal Veterinary College.

(Continued from p. 699.)

Summary.—*M. Chauveau* elected President of the French Association for the Advancement of Sciences for 1881. *M. Bouley* nominated as successor to Claude Bernard; *M. Goubaux* appointed Director of the Alfort Veterinary School. Retiring provision for Belgian Veterinary Professors.—Honours to Military Veterinarians in France.—Medical degrees obtained by Veterinary Teachers.—Two new French Veterinary Journals!—Italian Veterinary Congress.—A Dictionary of Veterinary Medicine and Hygiène.

“On the condition of Veterinary Education in Sweden,” from the *Echo Vétérinaire Belge*.

“On minor Veterinary Education and instruction in dairy farming in Finland and Denmark.”

In France the leading veterinary surgeons have recently been taking up a prominent position in the scientific world—awards and honours seem to be the order of the day, and they are well deserved, for this is a time of great professional activity. “*M. Chauveau*, the Director of the Veterinary School of Lyons, was elected President for the exceptional meeting in Algiers of the French Association in April, 1881. The nomination of *M. Chauveau* took place against the wish of the Council of the Society, who had presented as their candidate *M. Baillon*, the author of the Botanical Dictionary. The appointment of *M. Chauveau* is considered as a protest against the Haeckelian tendencies of the committee and a revival of the old Montpellier vitalist opinions. At all events, it has created some sensation;” thus writes *Nature*. “It is not a little curious to an onlooker to see how the doctrines of the great *Cuvier* still influence the progress of science in France, and how a return wave from that great tide which led to the enthusiastic reception of *Haeckel* in France not long ago, is about to land Professor Chauveau in the presidential chair. While the countries of Darwin and Goethe are with steady but sure progress receiving the grand idea of “evolution,” Lamarck and Geoffrey St. Hilaire seem prophets who have no honour in their own country. Apart from these views,

we are sure our readers will appreciate M. Bouley's remark on this election: "M. Chauveau is one of our *confrères* and the entire profession will feel a legitimate pride at this new success of one of our most eminent chiefs." M. Bouley, too, has received a well-earned and just acknowledgment of his scientific value. "The principal candidates for the chair of Physiology, as successor to Claude Bernard, were M. Bouley, of the Institute, Inspector-General of Veterinary Schools; M. Arm. Moreau, a pupil of Bernard; M. Rouget, Professor to the Faculty of Montpellier. The professors of the museum have just placed M. Bouley's name first on the list; also at the last sitting the Academy of Sciences similarly gave M. Bouley the highest place. His appointment may, therefore, be considered as certain." (*Revue Scientifique*.)—We observe too, with satisfaction, that by a ministerial decree of the 25th June, 1879, M. Goubaux was appointed Director of the Alfort School. We have reason to believe that his appointment to this leading position will prove beneficial to the School, and satisfactory to his present, future, and former pupils. His care has considerably improved the teaching of Anatomy during his tenure of the post of Professor of Anatomy. He is a member of the Academy of Medicine, and of the Société Centrale de Médecine Vétérinaire, of which he occupied the presidential chair in 1857. We learn from the *Annales de Médecine Vétérinaire de Bruxelles* of September, one of the benefits of government control of veterinary schools. Thus, "according to the law of 30th July, 1879, in reference to retiring provision (*éméritat*) for professors, &c., of higher instruction, the director and professors of the School of Veterinary Medicine as well as those of the Agricultural Institution of the State, &c., may claim the retiring provision (1) after 30 years academical service, whatever their age; (2) on attaining the age of 70 years, with at least 10 years' academic service; (3) on resignation, on account of serious and permanent infirmity after 20 years of academical service. The retiring pension is equal to the estimated medium between the salary and salary as augmented during the last five years." While veterinarians of the British army receive from the government "the pound of flesh without one drop of blood," except when a retrospective warrant or order stops some allowance or removes a time-honoured privilege, the French Government is selecting from amongst its veterinary officers such as are worthy by length of service and energy in the field to be recipients of the Légion d'honneur. Thus M.M. Dubourdeaux, Gilibert, Roques, Flamens, and Voyer were honoured with the *Grade*

de Chevalier by a gazette of 12th July last. Each of these veterinarians has merited well of his country by upwards of 27 years service, while M. Voyer has served through eleven campaigns. While the above-mentioned distinctions are rewards for services rendered we also are able to note signs of intellectual activity, which are afforded by members of our profession, who, though not yet leaders in their country are drawing well to the front. MM. Arloing and Toussaint, who during the course of 1878-79 have passed all the examinations necessary for the degree of Doctor of Medicine at Toulouse, have completed the series of tests by sustaining each a thesis. Thus, on 30th June, was read M. Arloing's paper on "Comparative experimental researches on the action of Chloral, Chloroform, and Ether, with practical applications." On the 15th of the same month, M. Toussaint's "Experimental researches on the Charbon Disease (Anthrax)." We hope to give a *resumé* of M. Arloing's paper. Among other signs of the times we see that two new professional journals have appeared in France. M. Quivogne has originated the *Echo des Sociétés et Associations Vétérinaires*, in the endeavour to rescue from complete oblivion or the semi-oblivion of the minute-book the sayings and doings of the various associations. It will be remembered how, at the Congrès, M. Quivogne obtained an unanimous vote in the question of the best means of organization of veterinary societies. We wish him and his journal every success and cannot but think that if some guiding hand would unite the associations of veterinarians in this country it might be shown that "*union is strength*." In placing before our readers the deliberations at the Congrès Vétérinaire Français sometime ago we ventured to hint that such a meeting of the members of the profession in Great Britain would prove instructive and would tend to promote professional good feeling and influence with the State and public. Italy is about to follow the example of her neighbours, so in the *Annales Vétérinaire* we find the following notice of the Congrès Vétérinaire Italien. "A committee, composed of the professors of the different schools of veterinary medicine in Italy, as well as of veterinary practitioners from all parts of that country, has just issued invitations to a Congress which will take place at Bologna on the 7th to 10th September (inclusive). His Excellency the Minister of Public Instruction, appreciating the importance of the questions which will be there discussed, has decided to be represented at the meetings by a special commissioner, Count Ercolani, Professor at Bologna. The Minister of Agriculture, Industry,

and Commerce and also the Minister of the Interior will also be represented by special delegates. The questions to be brought forward for discussion are divided into two groups, and may be thus given in summary.

I. *Veterinary Instruction*.—(1.) Propositions concerning admission into veterinary schools. (2.) Number and organisation of the State Veterinary Schools, and organisation of unofficial schools. (3.) Affiliation of veterinary schools to first-class universities, or to other high-class university institutions. (4.) Decision of the number of professors and assistants at the veterinary schools, with the distribution of the various subjects among the different chairs. (5.) The necessity of giving more extension to the instruction in descriptive and topographical anatomy, and of separating its instruction from that of physiology. (6.) Means of rendering veterinary instruction more practical at the different schools. (7.) Formation at all veterinary schools of a travelling clinical course of instruction in matters concerning the ox, sheep, pig, &c. (8.) Formation of special chair for instruction in meat inspection. (9.) Institution of the post of Inspector of Italian veterinary schools. (10.) Bien-nial nomination of the director for each school. (11.) Improvement of the position of the teaching staff. (12.) Organisation of an extern-clinic or *polyclinique*, taking into consideration the requirements of the schools and of the public. (13.) Administration of veterinary schools. (14.) The course of zootechny at the schools, and the prominence to be given to it.

II. *Professional Questions*.—(1.) Necessity for prevention of veterinary practice by nonqualified persons. (2.) Obligatory institution of veterinary delegations or societies in all Italy. (3.) Organisation of veterinary service in relation to slaughterhouses of large towns, and determination of the best means of bringing about meat inspection in every commune in the kingdom. (4.) The necessity of formulating the rules which ought to guide veterinary meat inspectors throughout Italy in the appreciation of the anatomopathological lesions which ought to exclude butchers' meat from consumption as food. (5.) Organisation of the veterinary service in Italy. (6.) Law regulating the questions of "soundness and unsoundness," and other questions relating to the sale of domesticated animals. (7.) Formation of a bureau of mutual aid and protection for all veterinarians. (8.) Necessity of fixing a veterinary pharmaceutical *tariff* for all Italy.

For each of these questions a special reporter has been

appointed; he will show to the congress the actual state of the question placed in his hands; and will, if the case allows, submit such suggestions as he considers likely to be useful. In order to reduce the expenses of attendance the railway companies have consented to allow veterinarians a reduction of 30 per cent. of the usual fares.

The first number of the second new journal is now before us. The *Journal de Médecine Vétérinaire Pratique et de Zootechnie* is to appear monthly under the editorship of members of three professions: M. J. Pelletan, M.D.; M. Gaston Percheron; and M. C. Montreuil, Pharmaceutical Chemist, Medallist, and Ex-interne of the Hospitals of Paris. *M. Percheron* has been mentioned by us in a previous synopsis as author of a work on the parrot, and we now see he has in the press a "Complete Treatise on Canine Pathology." For the aims and scope of the journal we cannot do better than refer to the first page, the commencement of the *Chronique*. "The journal which we present to our readers is, we hasten to inform them, entirely independent. That it may not give the lie to its title, *Journal of Practical Veterinary Medicine*, it will readily receive from every source, and of any scientific or professional character, all communications, observations, &c., which may be addressed to it. We know besides, too well, especially from a recent case, how sometimes the so-called *official* journals consign to the waste-paper basket the manuscript of the humble practitioner. Besides this it will, to fulfil its secondary title, *Review of French and foreign work*, while it places before its readers the most interesting articles published in France by the veterinary press, also have the honour to produce the original work of learned foreign practitioners, who have promised their aid. For though France is the cradle of the veterinarian, that is no reason for neglecting, as do most of our publications, that which passes around us in the world. Such is our programme. We might give many variations on the same theme, but that would be to fall into the ways of a publication somewhat older than ours, which gives itself the pleasure of a profession of faith which still lasts, but we have too much respect for our readers and for ourselves to follow this example." We see, then, that the journal originates in *pique* at rejection of a paper forwarded to some established journal, and we can hardly help thinking that the charge of neglect of foreign work by official journals is not wholly allowable, since we recently reproduced from a French source reviews of progress in Italy and in Germany; and we have now a review of Belgian veterinary

literature by *M. Chenier*. Any addition to professional literature, however, is welcomed by us as a sign of progress and a proof of interest in the profession; and while the *Journal Pratique* adheres to its programme of liberal views, independence, and expanded survey, we shall wish it well (Williams and Norgate, Henrietta Street, Covent Garden, are the London agents). We observe in this number the paper of M. Salle on "Typhoid Blood," and the case of extensive sheep poisoning by the arsenical bath, which we have recently brought under the notice of our readers. Also, we here find Bastian's article in *Nature*, by which a short time ago he triumphantly drew attention to certain views and observations expressed by Dr. Lewis in his recent work on "Nematode Hæmatozoa," which are considered valuable supporting evidence of spontaneous generation. "It is inserted as a summary of the principal objections which a great number of pathologists in the present day adduce against the *theory of germs of disease*." The share which veterinarians should have in awarding prizes at agricultural shows is the subject of a communication by M. Dubourg, who says, "Buffon and his illustrious friend Daubenton, and after them Isidore Geoffroy Saint-Hilaire, allowed that no instruction was more capable of enlightening the country on the important question of multiplication and improvement of our domesticated animals than that of the veterinary schools. Had Daubenton remained for a longer time Professor of Rural Economy at the Alfort School he would certainly have endowed agriculture with the science of zootechny; but this science dates scarcely from 1838. The word zootechny occurs, I believe, for the first time in Ampère's essay on the 'Philosophy of Sciences.' To the Count of Gasparin is due the honour of having conceived the idea of elevating the rearing of our domesticated animals into a science; and Baudement was the first who declared that animals were agricultural capital, and their production should be one of the applications of physiological knowledge (1849). Time and experience have justified the opinions of this eminent professor, who was the first occupant of the chair of zootechny at the Agricultural Institute of France. Previously the characters of different races were based on given variable features, such as size, direction of the horns, colour, size of hoof, &c., which are all liable to modify under the influence of artificial selection and variable surroundings. Now, it is allowed that the true distinctive characters must be sought for in the spinal column and in the cranium, for the laws of reversion and heredity

leave these unchanged (!) Craniology and craniometry belong as well to zootechny as to biology. Knowledge of the fitness of different animals for various purposes is now derived from anatomy ; indeed the transmission of good and bad qualities is a consequence of the biological laws of heredity, atavism, and reversion." Thus much for *zootechny* ; in England we are almost where France was in 1838 with regard to this science.

The only veterinary dictionary in the English language with which we are acquainted is Boardman's. Here, too, we are fully forty years behind our neighbours, for though the work of Hurler D'Arboval will always remain classical, a *New Dictionary of Veterinary Medicine and Hygiène* is to appear under the auspices of MM. Sanson, Trasbot, Nocard, and P. Bouley, whose names are a full guarantee of the value of the promised work. Arrangements have been made with Asselin and Co., the well-known publishers, for bringing out, at least, one volume per annum.

Since we endeavour in these synopses to give our readers as much information as possible of the state of all questions of professional interest abroad, we may insert the following notice of the condition of veterinary education in Sweden, which we obtained from the *American Veterinary Review* of August, 1879, and the *Veterinary Journal* of October, 1879. Its source, the *Echo Vétérinaire*, Belge, is not available to us at present.

The first veterinary school in Sweden was founded by Hernquist (born in 1726). After passing his examination as a doctor in philosophy, at the University of Upsala, Hernquist went in 1763 to France, and at Lyons studied veterinary medicine. In 1774 he established the veterinary school at Skara (Sweden), and was appointed professor of it in 1778, remaining in it until his death, which took place in 1808. He was a writer and practitioner of merit. One of the best of his pupils, S. Norling, took his place in 1814, and in 1820, by order of the Swedish Government, he organised the veterinary school at Stockholm, and was appointed its director, a position which he held as well as that of Skara, until his death in 1855. The Skara School was a preparatory one for that of Stockholm, where the student after a stay of two or three years underwent examination for the degree of veterinary surgeon. At that time, as now, the students came from Sweden, Norway, and Finland, and during this period a great number of men belonging to each of these countries graduated at the Stockholm College. In 1867 it was fixed by Royal Ordinance,

that before a student could enter that college he must have obtained the diploma of graduate in letters of the university. This measure for the elevation of veterinary instruction was due to the initiative of Professor Landberg, and instead of diminishing the number of students as some had predicted, it led to an increase. While requiring from candidates for admission to this school an amount of preparatory knowledge not demanded by any other veterinary school in Europe, the Swedish Government has taken care to protect the interests of its graduates and increase their income; the consequence is, that the number of graduates has correspondingly augmented in quantity and quality. The candidate, twenty or twenty-one years of age, being a graduate in letters is received into the veterinary school, and there he has to study for four, or even six years for backward scholars. The school has four professors, each with an annual salary of about £230; a lecturer, with a salary of £168; an assistant or adjoint, and a teacher of farriery. Two of the professors, the assistant, and the farriery instructor, reside in the college; the others have a yearly lodging allowance of £28. The course of teaching at present is as follows:

Anatomy, physiology, zoology, and pathological anatomy.—Professor Kinnberg.

Zootechny, sanitary science and police, and the ambulatory clinic.—Professor Morell.

Surgery, obstetrics, farriery, and clinical surgery.—Professor Sjostedt.

Pathology, therapeutics, epizootics, pharmacodynamics, pharmacotechny, and special clinic.—Professor Lindquist.

Botany, physics, chemistry, pharmacology, and pharmacy.—Lecturer Ericsson.

The assistant aids in the clinic, and the other official instructs in farriery.

In Sweden there are thirty government veterinary surgeons who receive an annual payment of £80 with travelling allowances. The regiments in garrison have a regimental veterinary surgeon who ranks as lieutenant with a yearly pay of £170, and a batalion veterinary surgeon with the rank of sub-lieutenant who receives annually £112. Regiments of the line have regimental and squadron veterinary surgeons, the latter having the grade of non-commissioned officer and yearly pay of £56. The number of civil and military veterinary surgeons under government is 170, and all, so far as their scientific duties are concerned, are under the direction of the medical authorities. In 1866 a credit of 700,000 francs

(about £30,000) was allowed for another school in Stockholm, which will be finished in 1880.

We were honoured not very long ago by a visit of Professor Lindquist (whose name is misprinted in the American version) to the Royal Veterinary College. He informs us that foreign works of science are principally used in the Swedish Schools, there not being a large enough reading professional public to encourage native enterprise in this direction. The well known advanced condition of general education in Norway and Sweden necessitates some such measure as requisition of a University "Diploma in letters," but we must remember that universities and general education abroad being under the direct control of Government, the higher course of instruction for which Diplomas are granted, whether in arts or sciences, are by no means equivalent to our University degrees. Thus the certificate of general education required prior to commencement of medical studies in France, is one of *Bachelor of Science* from a French or of *Matriculation* from an English University. The various teachers seem to have a great deal more work than we would be inclined to consider compatible with thoroughness; their salaries, too, do not seem very large, but allowance must be made for the difference between the value of money in England and Sweden. The same remark applies to the military appointments; our Army Veterinary Department happily has an independent existence, and does not embrace non-commissioned officers. From the catalogue of the dairy produce of Finland exhibited at the International Agricultural Exhibition at Kilburn, 1879, we learn that this country has eight agricultural schools, besides an agricultural college at Mustiala. At the schools the principles of breeding and rearing, treatment and feeding of domestic animals are comprised in the curriculum, while at the college the students are taught in addition to the above subjects, anatomy and physiology of domestic animals, and the treatment of the same in diseases, a special teacher superintending this department. The veterinary practitioners in this country have a novel patient in the reindeer; animals of this species number in the government of Uleåborg 79,715. The government fully alive to the value of dairy farming, has an organised system of dairy schools, district and village dairies, and itinerant female teachers in dairy-farming. The pupils at the dairy schools are females, they are servants to the master and as such are entitled to board and lodging. Their period of pupilage extends over two years; at the end of each year they are subjected to a

public examination under government supervision. The different subjects taught, are—*First years course*.—Animal physiology, the treatment of animals in health, the commonest forms of disease prevalent among domestic animals, and the treatment thereof, rearing of young stock, feeding and nutritive value of the various fodders. *Second years course*.—Milk and its component parts, the influence of temperature upon the component parts of milk, use of the thermometer, the various methods of creaming, treatment of the cream before butter making, and treatment of butter, making butter from new and from skimmed milk, book-keeping by single and double entry.

This system of female education for dairy purposes must prove useful in supplanting the blind system of routine by scientific method, be the latter ever so rudimentary. We can imagine, however, that a qualified practitioner would find these veterinary *sages femmes* occasionally *de trop*. In Denmark, too, young women have an opportunity of acquiring a scientific acquaintance with dairy husbandry. At the Copenhagen Royal Agricultural College, there is a chair especially devoted to this important branch of agricultural science.

ON PLANTS IN RELATION TO ANIMALS.

By Professor JAMES BUCKMAN, F.G.S., F.L.S., &c.

(Continued from p. 722.)

BEFORE entering upon a description of the poppies we shall in this paper confine our attention to the water-lilies, reserving the poppies for our next. We prefer this course because the natural order, *Nymphæaceæ*, contains plants in which the fruit or capsule is formed of loosely united pistils, which in the poppy become still more united and capsular.

The order, in as far as our native genera and species are concerned, presents but few plants. These, however, are of great interest, whilst exotic examples are wonderful in the extreme, to show which fact we have only to mention the grand *Victoria Regia*, with leaves some six feet across, and flowers several inches in diameter, a native of Tropical America, or the beautiful *Nelumbo* from Tropical Asia.

Bentham describes the order as follows :

THE WATER-LILY FAMILY.—*NYMPHÆACEÆ*.

Aquatic herbs, with prostrate submerged root-stock, orbicular or peltate floating leaves, and large solitary flowers. Sepals few. Petals numerous, in several rows passing into the stamens, which are also very numerous, their anthers adnate. Carpels numerous, but either imbedded into the receptacle or combined together so as to form a single ovary with many cells each terminating in a sessile stigma. Seeds albuminous in the British genera, with a very small embryo.*

The beautiful gradation from the sepals to the floral organs is exhibited in a remarkable manner in the white water-lily, on which account the flowers of this plant are well worthy of a careful study. Growing, as we have seen it, in the ponds of Cheshire, the pure white gleaming stars are truly wonderful, so much so that we could not resist having a flower or two with the beautifully-formed bright green leaves floating in a large China bowl on our library table during the whole period of its flowering, which is generally during the greater part of the summer.

We have successfully cultivated this plant in our garden pond by tying a root to a stone, and then sinking over it any common mould, a plan we have never known to fail.

The uses of the white water-lily are now few indeed, though formerly it was greatly esteemed both as food and medicine. It is at present, however, only grown for ornament; this and its former medicinal repute has caused its spread over a great part of our country as if indigenous with us; we can bear witness to the fact that in many places in which it is now met with it was planted for ornament.

The author just referred to gives us its localities. Lakes or still waters, and slow rivers extending all over Europe and Northern and central Asia, although absent from peculiar localities. Generally distributed in Britain. Flowers in summer. It may be occasionally seen with smaller flowers, and several varieties have been distinguished by minute but uncertain characters in the forms of the anthers and stigmatic appendages. The folk-lore of the water-lily, as might be expected, is exceedingly interesting; this is so well described in the following from the pen of Mrs. Lankester that we cannot forbear to quote her remarks in their entirety, not only upon this but, as will be seen presently, on the commoner yellow water-lily.

White Water-lily. — *Nymphæa* derived from *νυμφη*

* See 'Illustrated Handbook of the British Flora,' vol. i, pp. 26-27.

(*nymphé*), a water-nymph, in reference to the habitation of these plants. As the rose is the queen of the bower, so undoubtedly the lily is the empress of the lake, and we may almost endorse her poetical Indian name “camada” or “delight of the waters.” The lovely purity and delicacy of the white water-lily can scarcely be exaggerated, but, perhaps, it is only when seen in its favourite haunts in profusion and perfection that we can fully enter into the fervid descriptions of some of our British poets. In Japan, either natural or artificial white water-lilies are borne in the funeral processions of young persons as emblems of purity. Like the sacred lotus of the Nile, the flowers of our white water-lily rise and expand as the day advances and the sun gains strength, closing again at evening, sleeping, as it were, through the hours of darkness, until called into life again by the warm rays of light. Moore poetically describes this natural process :—

“Those virgin lilies all the night,
 Bathing their beauties in the lake,
 That they may rise more fresh and bright,
 When their beloved sun’s awake.”

The stimulus of the sun’s rays seems to have relation to the fertilisation of the plant. The pollen if scattered beneath the water would be washed away and decomposed, while on the expanded raised flower it is received without injury. This is truly the object for which—

“The Water-lily to the light
 Her chalice rears of silver white.”

The water-lily may be transplanted from its native home by placing the thick rhizomes in baskets of earth and fastening stones to them, so as to keep them well under water, and nothing can be more lovely than a calm lake on whose bosom may be seen floating numbers of these snowy nymphs. The thick stems have a bitter astringent taste, but free from any poisonous qualities. In Ireland and the Island of Java the tuberous rootstocks are used to dye a dark brown colour. They have been used in medicine, and esteemed narcotic. In China starch is obtained from them for dietetical purposes.

The *Nuphar lutea*, yellow Nuphar—yellow water-lily, water-can, brandy bottle, clote, &c., &c.—is very common in all our streams, especially the more sluggish ones. In the Yeo in the Yeovil district it is very common, so also on the reaches of the River Stour, in Dorsetshire. Here its yellow flowers occupy the waters continuously, giving rise to

the name of the Clotey Stour, nuphar being called clotes in Dorset.

In a poem entitled "Naighbour Playmëates" we have the following :—

"O Jaÿ betide the dear wold mill,
My naighbour playmëates' happy hwome,
Wi' rollèn wheel, and leopen foam,
Below the overhangèn hill,
Where, wide an' slow,
The stream did flow,
An' flags did grow, an' lightly vlee
Below the grey-leav'd withy tree,
While clack, clack, clack, vrom hour to hour,
Wi' whilìn stwone, an' streamèn flour,
Did goo the mill by cloty Stour."—BARNES.

The Stour, and all the Dorset and Somerset streams, are full of this plant, so are many of our now little used canals. The larger flowered form is the most common.

Syme, in the new edition of 'English Botany,' makes out three forms of this plant, namely, *N. lutea*, var. *a major*, *N. lutea*, var. β *minor*, and *N. pumila*, but we agree with Bentham's remarks that it is fully as common and in many places more so, than the white water-lily with the same geographical range, certainly more general in Britain. *Fl.* all summer. It varies much in size, and in the number of the stigmatic rays. A very small form, with a more indented stigmatic disk found in the lakes of the north of Scotland, has been distinguished as a species under the names of *N. pumila* and *N. minima* or *N. minor*, but we quite agree that the characters are not sufficiently distinctive to make out species.

The yellow water-lily formerly was reputed both as a medicine and a food, but in the present day it has fallen in repute for any utility whatever. At the same time it is a very interesting plant, and is besides a nidus for the attachment of very curious creatures, *e. g.* fresh-water shells attach themselves to the under part of the expanded leaves, so also the eggs of various aquatic creatures. Before now we have seen the under parts of the leaves of the yellow water-lily to contain a complete museum of organisms, so that we strongly recommended the naturalist never to overlook this source of instruction.

Like the former this species is not held in the repute that formerly attached to it; still it is a plant much esteemed in the country and certes a river is much enriched by its presence. It is a bright yellow colour in contrast with

the white water-lily, and wherever we see it we fully coincide with the following remarks.

Yellow water-lily.—The generic name is from *Naufar* or *Nylonfar*, the Arabic name of *Nymphæa*. It is the *νουφαρ* of Dioscorides. This bright-coloured lily is almost as attractive in its golden radiance, as its more modestly attired and charming sister. “In golden armour glorious to behold,” it forms a beautiful object on the surface of a lake or river. The blossom has a somewhat powerful and not very refined or pleasant smell resembling ardent spirits; hence, the common name sometimes given to the plant of brandy-bottle. The Greeks prepare a cordial from the flowers. The rootstocks contain a considerable quantity of starch, as do also the seeds. Some persons boil the seeds, when they are said to have a pleasant nutty flavour. The leaves have been used as a styptic. All parts of the plant contain tannic acid, and are useful in tanning, especially the rootstocks. The prostrate stems rubbed with milk are a reputed poison for crickets and cockroaches. An infusion of the rootstock (known as the root) in water, was long considered a specific in eruptive diseases of the skin. The tropical species of *nymphæaceæ* have wonderfully tinted blossoms of blue and crimson. An allusion to the near alliance of these British water-lilies with the magnificent water-lily of the west—the *Victoria Regia*—where flowers are often fifteen inches in diameter, and whose leaves frequently measure six feet and a half across may perhaps be excused. All lovers of floral beauty should give themselves the treat of seeing these magnificent flowers in the aquatic greenhouses at Kew, or in the Regent’s Park Botanical Gardens, where, in the season, they blossom in perfection.

We have, then, in the water-lilies plants exceedingly interesting from structure and locality, but which have lost position as medicines within recent times; not so, however, the poppies which will occupy our attention in the next paper.

CASE OF ENTERIC DISEASE IN A MARE—ABSENCE OF LEFT KIDNEY—HYPERTROPHY OF RIGHT, WITH CALCULI IN SAME.

By F. T. STANLEY, M.R.C.V.S., Montague Street, Borough.

I HAVE great pleasure in placing the particulars of the above case in your hands, if you deem them worthy of insertion.

in your Journal. I have never seen such a case before, nor have I heard of such being recorded.

Subject.—A grey cart mare, the property of Messrs. Bevington and Morris, Tanners, Bermondsey.

My attention was first called to this animal on 28th August. She was noticed by the attendant to be off her food.

Symptoms manifest, are simply these:—Mare appears dull, looks thin, visible mucous membranes of a yellowish hue, bowels very much constipated, and loss of appetite.

Diagnosis.—Disease of bowels and functional derangement of liver.

Treatment.—A mild purgative to be administered, with Hyd. Chlor., ʒss; followed by diffusible stimulants and vegetable tonics; diet to be light and nutritious. Treatment being continued to September 9th, and the symptoms still unrelieved, I recommended that the animal be sent into my Infirmary, which was accordingly done.

September 10th.—Bowels remaining obstinately constipated I administered an aloetic purgative, Massa Aloes, ʒivss, Hyd. Chlor., ʒss. As animal appears dull and languid I gave her a diffusible stimulant in draught. Enemas were thrown up twice daily.

11th.—Symptoms as hitherto, with the exception that the bowels are acting better; a moderate quantity of soft fæculent matter is voided. Muscles of quarters, neck, back, and thorax are gradually wasting. Animal eats a very small quantity of green food, drinks water sparingly, refuses hay, corn, gruel, linseed, &c. I now prescribed Pulvis Chinchona, ʒss, Nitromuriatic Acid, ʒj, in pint old ale daily.

12th.—Bowels are again constipated; a few small pieces of fæculent matter are voided coated with mucus; urine is voided freely and in normal quantity; pulse and respiration are normal.

13th.—Symptoms as before; animal more attenuated; repeat medicine in old ale.

14th.—No improvement in symptoms; repeat stimulants and tonics, with restoratives; one hour's walking exercise per diem.

The symptoms continued unabated to September 20th, when I wrote to my clients, stating that I was of opinion the mare was suffering from organic disease of bowels, and the only course to pursue was to have her destroyed. She was consequently destroyed on the 26th of Sept., and the following were the pathological conditions I found.

Post-mortem.—The mucous and muscular coats of jeju-

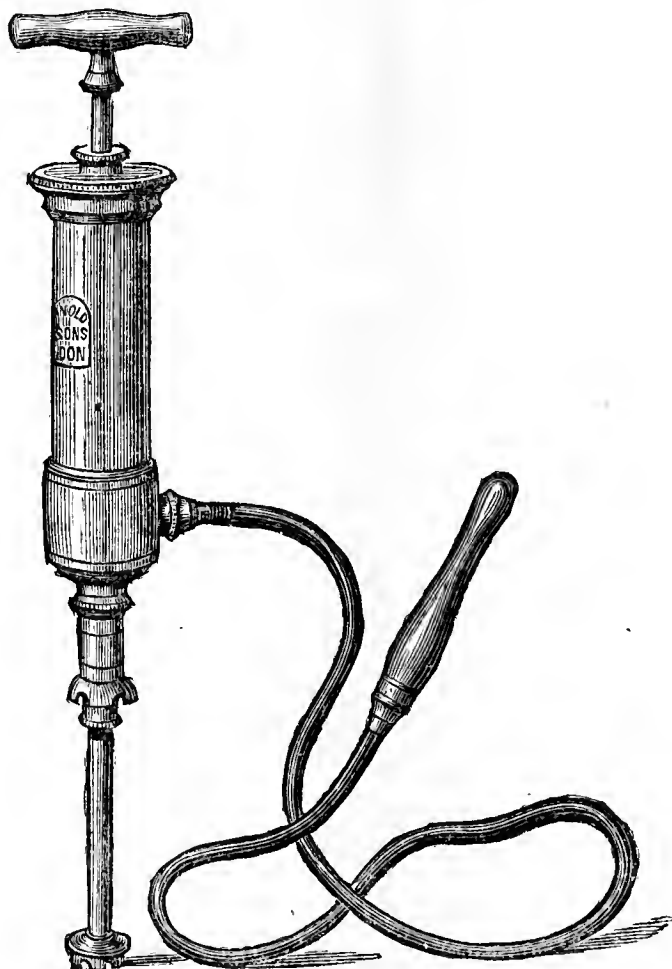
num and ileum are very much thickened, and in places the gut is denuded entirely of its lining membrane; indeed the structure of same is disintegrated. About the centre of ileum an abscess is discovered containing about half a pint of foetid pus. The right kidney is hypertrophied, weighing $5\frac{3}{4}$ lbs. In the pelvis of same, four small calculi are discovered. No trace whatever of left kidney. The remaining abdominal viscera are apparently healthy, as are those of pelvis and thorax.

It is very remarkable that such a condition of the parts could exist, and the animal evince no pain and no formidable symptoms be apparent.

AN IMPROVED ENEMA SYRINGE (ILLUSTRATED).

Note from Mr. D. WINTON, M.R.C.V.S., Enfield.

SIRS,—Messrs. Arnold, of Smithfield, have made for me a very compact and handy little enema pump, and thinking it may prove a great boon to some of my professional



brethren in the country who ride, I take the present oppor-

tunity of drawing their attention to it. It is easily carried in the coat pocket, the flexible pipe being placed over the shoulder, under the coat or vest (where, by-the-bye, one should always carry the male catheter).

Instead of using a stable pail I get a man to hold a hand bowl or jug, which is much more handy; many of my best clients, knowing my objection to carry my old-fashioned and cumbersome instrument when riding, used to ask me whether I had brought my "piano" to-day. The present instrument bears about the same comparison to the old one as a revolver pistol does to an old blunderbuss. One can fill the gut in a few minutes with the new instrument, and I have always found, in cases of stoppage, that the lower bowel is less irritable, and retains an enema slowly injected (and the gut only half or three fourths full) much better than when thrown in quickly. The last but not least of the advantages of the instrument is that it costs only about two guineas; it might be greatly improved in appearance by being well plated.

Please accept my apology for trespassing so far on your valuable space. Yours faithfully.

To the Editors of the Veterinarian.

RHEUMATISM, AND ITS SUCCESSFUL HOMŒOPATHIC TREATMENT IN DOGS.

By SAMUEL GILL, M.R.C.V.S., Hastings.

ON May 7th I was sent for to go a distance of three miles to see a Scotch Skye terrier, suffering from acute rheumatism. The animal set up a howl directly the hand was passed over the body.

Treatment.—Tinct. Aconitum, five-drop doses every three hours.

May 8th.—Very much improved; ordered Tinct. Belladonna, five-drop doses, every three hours.

9th.—Tinct. Rhus, five-drop doses, every three hours.

June 21st.—A letter was received from the owner, containing the following remark:—"Capt. — has much pleasure in stating you have been very successful in the treatment of a Scotch Skye terrier suffering from an acute attack of rheumatism."

THE VETERINARY PROFESSION v. THE ROYAL VETERINARY COLLEGE.

AN adjourned meeting of veterinary surgeons was held on Wednesday, Oct. 1st, 1879, at Freemasons' Tavern, Great Queen Street, W. C., to consider the system of competition maintained at the Royal Veterinary College.

The *Chairman* (R. Ward, Esq., F.R.C.V.S.) said the object of the meeting was now widely known, and it would be remembered that at the last meeting, on June 5th, it was resolved to ask the President and Council of the Royal College of Veterinary Surgeons to allow a meeting to be held in the Board-room. This request had not been acceded to, so a room was engaged in this building, which had old associations with the profession, having been the headquarters of the R.C.V.S. prior to its acquiring its present noble, commodious, and eligible premises in Red Lion Square. He had laid the charter and bye-laws before a gentleman learned in the law, who had pointed out that the Council was not justified in refusing the use of the room, and that under Bye-law 16 we could demand as a right what we had asked as a favour.

The *Hon. Sec.* (Mr. T. Moore) said he had received several letters sympathising with the object of, and regretting inability to attend, the meeting. He mentioned the names of Messrs. R. Moreton, Webb, Williams, and Woodger, jun., and read the letter from the latter gentleman, as follows:

"39, GOLD HAWK ROAD,
"SHEPHERD'S BUSH, W.;
"Sept. 30th, 1879.

"DEAR SIR,—I regret that it will be impossible for me to attend the meeting to-morrow evening, as I have a previous engagement. I must say I perfectly agree with the object of the meeting, and consider it decidedly degrading to the profession that the animals of the wealthy should be attended, &c., for a nominal sum, as at the St. Pancras' Veterinary School; it also is unjust to those veterinary practitioners whose practice is near that institution. In my opinion the Governors of the St. Pancras School do not value the services of the teachers of that institution much, or they would never continue such a system as exists. They confer the title of professor upon the teacher and value his services in examina-

tion as only worth two or three shillings, and in cases of treatment of disease at even a less value.

"I trust you will have a full meeting, and that some move will be made with the view of doing away with such a pernicious system of competition.

"Yours very faithfully,

"JOSEPH WOODGER.

"To T. Moore, Esq.,

"11, Upper Berkeley Street."

Mr. Barker understood that it was decided that some gentlemen should be selected to obtain an interview with the Governors of the Royal Veterinary College and explain matters, and he thought that would be the proper course.

The *Chairman* explained nothing definite was arrived at, only that another meeting should be held to further consider what steps should be taken.

Mr. Geo. Fleming was sorry to notice the absence of some of the leading men who must be with the movement, and deeply regretted they did not turn up. Some steps should be taken to bring the subject to the notice of the Governors of the R.V.C.; and as the President of the Royal College of Veterinary Surgeons was the representative head of the profession, and the general body of practitioners was interested, the head of that body should be applied to as laid down by Bye-law 16; indeed it was the only way—at least, legal way. A special meeting of the profession being held, we have the opinion of all; and then a deputation might be elected to wait on the Governors, which would carry more weight and be received better than a deputation selected at this meeting, of which it might be said it did not represent the profession. The former case it could not be so said. As to the fees, time has made a great difference in the value of money. Two guineas do not go so far now-a-days as it did three quarters of a century ago. The amount of work done now does not bear comparison with that done seventy-five years ago. The system is not good for the profession, and there could be no doubt it was degrading, demoralising, and unjust, and if it could be shown it was good for the students the profession might look at it more leniently, but when it is known the students rarely get the benefit of any of the cases, and that the teachers' time is taken up with the subscribers it must be pernicious. If the subscribers were poor and could not afford to pay, well and good, but it was not so; they were the

wealthiest men in the country. These gentlemen subscribed because they got a large amount of work done for next to nothing. The system is degrading, and lowers us in public estimation, for these gentlemen hold our calling in low esteem when so much can be done for so little. It is most unfair to the practitioners all over the country, the money acquired thus by the College really belongs to the practitioners. I am sure until this system is abolished the profession cannot stand in the position it ought to occupy; and as the subscribers increase the grievance will be felt more and more. I deeply sympathise with you. The profession must unite and bring pressure to bear. The Governors have no idea what is done at the College, or how the school is conducted, and gentlemen such as they are would not go into unfair competition. The school should be a scientific institution—they forget that; not an establishment to undersell or compete with its own members all over the country. Explain these matters to the Governors, and I feel sure they will do all they can to remove this practice.

Mr. Greaves (Manchester), although not mingling in the dispute, had asked himself the question, "If such circumstances existed where he practised, what view should he take of them?" (Hear, hear.) And he certainly should be aggrieved and feel it a duty to get rid of them. It only wanted nice management, and if the facts were laid before the Governors they were gentlemen who would listen, and soon, he felt sure, dispel all grievances. He thought perhaps a deputation from this meeting might be sufficient without going to the Royal College of Veterinary Surgeons. He also added some remarks on the examination of horse's fee, and considered a guinea was a fair one, and ought to be general.

Mr. Freeman (Hull), although not feeling the competition from a pecuniary point of view, said it was of professional interest, and the success of the movement had his best wishes, and thought the Governors could not thoroughly understand the matter.

Mr. Dyer spoke of his inability to get more than half a guinea for examinations, doubtless owing to the College doing it for a paltry sum.

Mr. Hunting spoke at some length, in the course of which he observed, that not only did the College compete unfairly in the subscription system, but in shoeing also. It devoted itself to shoeing. If the two guineas was a subscription to the College as a scientific institution it should not be allowed

to exist if it were not worth that sum. Our object is not to rob the College, and we must enable them to do good to themselves in some other way. He thought it would be a simple plan to appoint a deputation in the room to seek an audience with the Governors, but would vote with the majority.

Mr. Rogers said, many years ago, that this movement would come on some day, and was glad the time had arrived. He lately asked two guineas to go to Barnet to operate on a horse, but was told that a professor from the College could be had for nothing.

Mr. Rowe made some lengthy remarks on the College fees, principally touching the low charges for shoeing. He had experienced great hardship from the College tariff for many years, and trusted that now the profession had aroused itself it would be united. He would adopt the suggestion that the Royal College of Veterinary Surgeons be the medium of communicating with the Governors of the Royal Veterinary College, and therefore proposed "that a requisition be signed under Bye-law 16 and forwarded to the President."

Mr. Barker seconded.

The *Chairman*, in putting this to the meeting, said that it would be far better that the body corporate took the matter up; for if a deputation from a meeting like this went to the Governors, it would be stigmatised as composed of a lot of grumblers who could not get on, and came croaking under a cloud, and it probably might not be listened to. He considered we had a right of appeal to the R.C.V.S. as the Diploma-granting body, and it ought to protect the profession from causes tending to injure it. As it was, the Diploma was of little value when we have quacks styling themselves veterinary surgeons and practising as such on the one side, and the Royal Veterinary College taking the bread from our mouths on the other side. He was sure a change would benefit the students, and if the institution placed itself on terms of brotherhood with the whole of the craft they would undertake to furnish cases of interest for the students; not only that, but find them a cow or two, an adjunct so necessary for the tyro in cattle pathology. He would certainly be pleased to send interesting cases for the students' benefit, but as things are he dared not even mention there was such a place, for fear his client should avail himself entirely of the cheap terms offered. When a pupil he was disgusted with what little practice there was, and felt sure no examiner could say the young

men were acquainted with the practical duties of the profession.

Mr. Rowe's proposition having been put to the meeting and carried, the following requisition was drawn up :

“ LONDON, Oct. 1st, 1879.

“ *To the President of the Royal College of Veterinary Surgeons.*

“ Sir,—We, the undersigned Members of the Royal College of Veterinary Surgeons, assembled at Freemasons' Tavern, Great Queen Street, W.C., hereby request you to call, under Bye-law 16, a General Meeting of the Members of the College, to consider the system of competition maintained at the Royal Veterinary College, St. Pancras, N.W., which in the opinion of this meeting is injurious to the profession generally.”

This was signed by Messrs. Baily, Banham, Barker, Charles, Coleman, Dyer, Hunting, J. Moore, T. Moore, Rogers, Rowe, Surmon, Sheather, R. Ward, J. Ward, and Whitworth, of London; Freeman, Hull; Furnivall, Kingston; Gerrard, Romford; Gillingham, Croydon; Greaves, Manchester; and Samson, Mitcham.

Mr. Fleming wished to supplement his previous remarks by suggesting that a committee should be formed to draw up some arguments illustrative of the objects the meeting had in view. He was glad *Mr. Greaves*, who was so well known for his fairness and impartiality, was present, and had spoken in favour of the movement. He considered the proper course had been taken by the meeting in adopting the resolution of *Mr. Rowe*, because provincial members had a great interest in the question, and they not being at this meeting could only be represented by their President and Council. The College subscribers were scattered all over the country; he knew a very wealthy nobleman who sent horses from Yorkshire simply, as he said, “because he could have them attended to cheaply, and it would reduce his veterinary surgeon's bill most considerably.” Another important fact which the country practitioners should bear in mind is that the Royal Agricultural Society is in league with the Royal Veterinary College, which gives the former advice for a very small sum, and to members for almost nothing. *Mr. Fleming*, being an army man, did not feel the competition; but it must affect others most seriously, and he felt the cause was a just one.

The rest of the time was occupied in forming the committee as suggested by Mr. Fleming, and the following gentlemen were chosen: Messrs. Barker, Coleman, Gerrard, Hunting, Rowe, Sheather, R. Ward, Rowe, and the Hon. Sec.

THOMAS MOORE,

Hon. Sec.

[We give insertion to the preceding communication at the special request of Mr. Moore. Standing in the relationship which we do to the Royal Veterinary College, our readers will not expect that we should *now* give any opinion of the course which is being taken by a section of the profession. We may, however, express our belief that the Governors of the College will put no impediment in the way of those who are interested in continuing this discussion.—Eds.]

Pathological Contributions.

CATTLE-PLAGUE.

IN the Russian Empire cattle-plague is reported to have existed during this month in the Governments of Bessarabia, Volhynia, Ekaterinoslav, Podolia, Taurida, Kherson, and Petrokoff. The disease is also reported to have appeared in Russian-Poland, in the neighbourhood of Lubtenitz, on the Silesian Frontier of Germany. In Austria cattle-plague has broken out in the Government Districts of Littai and Stangenplane, in Carniola; it is also said to have existed in two or three villages near Ragusa, in Dalmatia.

FOOT-AND-MOUTH DISEASE.

IT will be seen by the *Gazette* return, which we publish for the week ending October 11th, that no outbreak of foot-and-mouth disease was reported to have occurred during the week in England and Wales. One outbreak was reported from Scotland, but after inquiry we have good reason to believe that the animal which died and the one which is entered as remaining diseased were not the subjects of foot-and-mouth disease, so we may say that no outbreak of the affection was known to have happened in that week. This is a great improvement upon our last notice of the foot-and-mouth disease in our September number, when we had to record a somewhat alarming increase in the rate of prevalence of the affection, which called for specially severe legislative measures.

THE CONTAGIOUS DISEASES (ANIMALS) ACT, 1878.
 RETURN of the NUMBER of PLACES in GREAT BRITAIN upon which Contagious or Infectious Disease (except Sheep-Scab) has been reported
 to have existed during the Week ended October 11th, 1879, with particulars relating thereto.

PLEURO-PNEUMONIA.

| | Farms or other Places. | | | Cattle attacked. | | Diseased Cattle. | | | | Cases which existed in previous Weeks not reported until this Week. | |
|--|--|---|---|--|---------------------------|------------------|-------|------------|------------|---|------------------|
| | Number reported upon this Week which have been previously reported upon. | Number upon which Fresh Outbreaks have been reported to have taken place during the Week. | Total Number reported upon during the Week. | Remaining diseased from the previous Week. | Attacked during the Week. | Killed. | Died. | Recovered. | Remaining. | Fresh Outbreaks. | Cattle attacked. |
| ENGLAND. | | | | | | | | | | | |
| COUNTY.* | | | | | | | | | | | |
| Buckingham | 2 | ... | 2 | ... | 1 | 1 | .. | .. | .. | .. | .. |
| Cumberland | 5 | ... | 5 | ... | 5 | 5 | .. | .. | .. | .. | .. |
| Derby | 6 | ... | 6 | 1 | 2 | 3 | .. | .. | .. | .. | .. |
| Essex | 17 | 4 | 21 | 2 | 18 | 19 | 1 | .. | .. | .. | .. |
| Hants | 1 | ... | 1 | ... | .. | .. | .. | .. | .. | .. | .. |
| Hereford | 2 | ... | 2 | ... | 1 | .. | .. | .. | .. | .. | .. |
| Huntingdon | 1 | ... | 1 | ... | .. | 1 | .. | .. | .. | .. | .. |
| Kent (ex Metropolis) | 4 | 3 | 7 | ... | 8 | 8 | .. | .. | .. | .. | .. |
| Lancaster | 19 | 3 | 22 | ... | 6 | 6 | .. | .. | .. | .. | .. |
| Leicester | 4 | 1 | 5 | ... | 5 | 3 | .. | .. | 2 | .. | .. |
| Lincoln, Parts of Holland | 1 | ... | 1 | ... | 1 | 1 | .. | .. | .. | .. | .. |
| " Lindsey | 1 | ... | 1 | ... | .. | .. | .. | .. | .. | .. | .. |
| Middlesex (ex Metropolis) | 3 | 2 | 5 | ... | 2 | 2 | .. | .. | 5 | .. | .. |
| Norfolk | 5 | 4 | 9 | ... | 13 | 6 | 2 | .. | 1 | .. | .. |
| Northampton (ex Soke of Peterborough). | 3 | 1 | 4 | ... | 1 | .. | .. | .. | .. | .. | .. |

| County.* | 137 | 41 | 178 | 9 | 128 | 123 | 4 | ... | 10 | 2 | 3 |
|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Notts | 5 | ... | 5 | ... | 1 | 1 | 1 | ... | ... | ... | ... |
| Salop | 2 | 1 | 3 | ... | 1 | 1 | 1 | ... | ... | ... | ... |
| Stafford | 2 | 2 | 4 | ... | 9 | 8 | 1 | ... | ... | ... | ... |
| Suffolk | 6 | 4 | 10 | 1 | 12 | 12 | ... | ... | 1 | 1 | 1 |
| Surrey (ex Metropolis) | 2 | ... | 2 | 1 | 6 | 7 | ... | ... | ... | ... | ... |
| Sussex | 1 | 1 | 2 | 1 | 1 | 2 | ... | ... | ... | ... | ... |
| Worcester | 3 | ... | 3 | ... | ... | ... | ... | ... | ... | ... | ... |
| York, North Riding . | 1 | 1 | 2 | ... | 2 | 2 | ... | ... | ... | ... | ... |
| " West Riding . . . | 11 | 10 | 21 | ... | 17 | 16 | ... | ... | 1 | ... | ... |
| The Metropolis . . . | 4 | 1 | 5 | 1 | 5 | 6 | ... | ... | ... | ... | ... |
| SCOTLAND. | | | | | | | | | | | |
| Aberdeen | 9 | ... | 9 | ... | 3 | 3 | ... | ... | ... | ... | ... |
| Edinburgh | 1 | 1 | 2 | ... | 1 | 1 | ... | ... | ... | ... | ... |
| Fife | 6 | ... | 6 | 2 | 1 | 3 | ... | ... | ... | 1 | 2 |
| Forfar | ... | 1 | 1 | ... | 1 | 1 | ... | ... | ... | ... | ... |
| Kinross | 3 | ... | 3 | ... | ... | ... | ... | ... | ... | ... | ... |
| Linlithgow | 1 | ... | 1 | ... | 1 | 1 | ... | ... | ... | ... | ... |
| Perth | 3 | ... | 3 | ... | 2 | 2 | ... | ... | ... | ... | ... |
| Renfrew | 1 | 1 | 2 | ... | 2 | 2 | ... | ... | ... | ... | ... |
| Roxburgh | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Stirling | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| TOTAL | 137 | 41 | 178 | 9 | 128 | 123 | 4 | ... | 10 | 2 | 3 |

FOOT-AND-MOUTH DISEASE.

| | Farms or other Places. | | | Animals attacked. | | Diseased Animals. | | | | Cases which existed in previous Weeks not reported until this Week. | |
|--|--|---|---|--|---------------------------|-------------------|-------|------------|------------|---|-------------------|
| | Number reported upon this Week which have been previously reported upon. | Number upon which Fresh Outbreaks have been reported to have taken place during the Week. | Total Number reported upon during the Week. | Remaining diseased from the previous Week. | Attacked during the Week. | Killed. | Died. | Recovered. | Remaining. | Fresh Outbreaks. | Animals attacked. |
| — | | | | | | | | | | | |
| ENGLAND. | | | | | | | | | | | |
| County.* | | | | | | | | | | | |
| Cambridge (ex Liberty of the Isle of Ely). | 4 | ... | 4 | 136 | ... | ... | ... | 98 | 38 | ... | ... |
| Chester | 1 | ... | 1 | 1 | ... | ... | ... | ... | 1 | ... | ... |
| Hants | 3 | ... | 3 | 424 | ... | ... | 1 | ... | 423 | ... | ... |
| Huntingdon | 2 | ... | 2 | 51 | ... | ... | ... | 11 | 40 | ... | ... |
| Monmouth | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Salop | 2 | ... | 2 | 2 | ... | ... | ... | 1 | 1 | ... | ... |
| Sussex | 2 | ... | 2 | 3 | ... | ... | ... | 3 | ... | ... | ... |
| SCOTLAND. | | | | | | | | | | | |
| County.* | | | | | | | | | | | |
| Roxburgh | ... | 1 | 1 | ... | 2 | ... | 1 | ... | 1 | ... | ... |
| TOTAL | 15 | 1 | 16 | 617 | 2 | ... | 2 | 113 | 504 | ... | ... |

GLANDERS.

GLANDERS.

| | | | | Horses attacked. | | | Diseased Horses. | | | | Horses attacked. |
|-------------------------------|-----|-----|----|------------------|-----|-----|------------------|-----|-----|-----|------------------|
| | | | | | | | | | | | |
| ENGLAND.—COUNTY.* | | | | | | | | | | | |
| Essex . . . | ... | 2 | 2 | ... | 2 | 1 | ... | ... | ... | 1 | 1 |
| Middlesex (ex Metropolis) . . | 1 | ... | 1 | 1 | ... | 1 | ... | ... | ... | ... | ... |
| Stafford . . . | ... | 1 | 1 | ... | 1 | ... | ... | ... | 1 | ... | ... |
| Worcester . . . | ... | 1 | 1 | ... | 4 | ... | ... | ... | 4 | ... | ... |
| The Metropolis . . . | 2 | 11 | 13 | ... | 15 | 14 | ... | ... | 1 | 1 | 1 |
| WALES.—COUNTY.* | | | | | | | | | | | |
| Anglesey . . . | 1 | ... | 1 | 1 | ... | ... | ... | ... | 1 | ... | ... |
| Carnarvon . . . | 1 | ... | 1 | 1 | ... | 1 | ... | ... | ... | 1 | 1 |
| Flint . . . | ... | 1 | 1 | ... | 1 | ... | ... | ... | 1 | ... | ... |
| TOTAL . . . | 5 | 16 | 21 | 3 | 23 | 17 | 1 | ... | 8 | 3 | 3 |

FARCY.

| FARCY. | | | | | | | | | | | |
|-------------------------------------|-----|-----|----|-----|-----|----|-----|-----|-----|-----|-----|
| ENGLAND.—COUNTY.* | | | | | | | | | | | |
| Essex | ... | 1 | 1 | ... | 1 | 1 | ... | ... | ... | ... | ... |
| Hertford | 1 | 1 | 2 | 1 | 1 | 1 | ... | ... | ... | ... | ... |
| Middlesex (ex Metropolis) | 2 | ... | 2 | 4 | ... | 1 | ... | ... | ... | 3 | ... |
| The Metropolis | 5 | 7 | 12 | 4 | 12 | 12 | ... | ... | ... | 4 | ... |
| TOTAL | 8 | 9 | 17 | 9 | 14 | 15 | ... | ... | ... | 8 | ... |

SWINE FEVER.

| | Farms or other Places. | | | Swine attacked. | | Diseased Swine. | | | | Cases which existed in previous Weeks not reported until this Week. | |
|-------------------------------------|--|---|---|--|---------------------------|-----------------|-------|------------|------------|---|-----------------|
| | Number reported upon this Week which have been previously reported upon. | Number upon which Fresh Outbreaks have been reported to have taken place during the Week. | Total Number reported upon during the Week. | Remaining diseased from the previous Week. | Attacked during the Week. | Killed. | Died. | Recovered. | Remaining. | Fresh Outbreaks. | Swine attacked. |
| ENGLAND. | | | | | | | | | | | |
| COUNTY.* | | | | | | | | | | | |
| Bedford | 2 | 2 | 4 | ... | 3 | 3 | ... | ... | ... | ... | ... |
| Berks | 1 | ... | 1 | ... | 17 | 17 | ... | ... | ... | ... | ... |
| Buckingham | ... | 2 | 2 | ... | 22 | 17 | ... | ... | 5 | ... | ... |
| Chester | 2 | 2 | 4 | 1 | 2 | 2 | ... | ... | 1 | 1 | 1 |
| Cornwall | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Derby | 5 | 2 | 7 | 5 | 2 | 6 | 1 | ... | ... | ... | ... |
| Devon | 3 | 2 | 5 | 7 | 5 | 11 | 1 | ... | ... | ... | ... |
| Dorset | 1 | 3 | 4 | ... | 17 | 5 | 2 | ... | 10 | ... | ... |
| Durham | ... | 1 | 1 | ... | 4 | 4 | ... | ... | ... | ... | ... |
| Essex | 4 | 3 | 7 | ... | 26 | 16 | 10 | ... | ... | ... | ... |
| Gloucester | ... | 1 | 1 | ... | 2 | 2 | ... | ... | ... | ... | ... |
| Hants | 4 | 1 | 5 | 3 | 8 | 9 | 2 | ... | ... | 1 | 1 |
| Hertford | 2 | 1 | 3 | 22 | 17 | 39 | ... | ... | ... | 2 | 23 |
| Huntingdon | 3 | 2 | 5 | 1 | 14 | 13 | 2 | ... | ... | ... | ... |
| Lancaster | 13 | 7 | 20 | ... | 12 | 6 | 6 | ... | ... | ... | ... |
| Leicester | 1 | ... | 1 | ... | 2 | 2 | ... | ... | ... | ... | ... |
| Lincoln, Parts of Lindsey | ... | 1 | 1 | ... | 1 | 1 | ... | ... | ... | ... | ... |

| | | | | | | | | | | | | | | | | | | |
|--|---|---|---|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Monmouth | . | . | . | . | 1 | 1 | 2 | 4 | 5 | ... | 4 | 5 | ... | ... | ... | ... | 1 | 4 |
| Norfolk | . | . | . | . | 8 | 3 | 11 | 6 | 25 | ... | 22 | 9 | ... | ... | ... | ... | ... | 1 |
| Northampton (ex Soke of Peterborough). | . | . | . | . | 5 | ... | 5 | ... | 14 | ... | 14 | ... | ... | ... | ... | ... | ... | ... |
| Notts | . | . | . | . | ... | 3 | 3 | ... | 3 | ... | 2 | 1 | ... | ... | ... | ... | ... | ... |
| Salop | . | . | . | . | 17 | 4 | 21 | 1 | 21 | ... | 15 | 3 | ... | ... | ... | ... | ... | ... |
| Somerset | . | . | . | . | 2 | 4 | 6 | 7 | 49 | ... | 48 | 8 | ... | ... | ... | ... | ... | ... |
| Stafford | . | . | . | . | 1 | 1 | 2 | 1 | 8 | ... | 4 | 4 | ... | ... | ... | ... | ... | ... |
| Suffolk | . | . | . | . | 3 | ... | 3 | ... | 26 | ... | 26 | ... | ... | ... | ... | ... | ... | ... |
| Sussex | . | . | . | . | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Wilts | . | . | . | . | ... | 1 | 1 | ... | 3 | ... | 3 | ... | ... | ... | ... | ... | ... | ... |
| York, West Riding | . | . | . | . | 2 | 4 | 6 | 4 | 5 | ... | 4 | 1 | ... | ... | ... | ... | ... | ... |
| Liberty of the Isle of Ely. | . | . | . | . | 1 | 1 | 2 | 2 | 4 | ... | 5 | ... | ... | ... | ... | ... | ... | ... |
| Soke of Peterborough | . | . | . | . | 5 | 3 | 8 | ... | 8 | ... | 4 | 1 | ... | ... | ... | ... | ... | ... |
| WALES. | | | | | | | | | | | | | | | | | | |
| COUNTY.* | | | | | | | | | | | | | | | | | | |
| Cardigan | . | . | . | . | 3 | ... | 3 | 6 | ... | ... | ... | 3 | ... | ... | ... | ... | ... | ... |
| Glamorgan | . | . | . | . | 1 | 2 | 3 | 3 | 7 | ... | 4 | 3 | ... | ... | ... | ... | ... | ... |
| Montgomery | . | . | . | . | 1 | ... | 1 | 6 | ... | ... | 6 | ... | ... | ... | ... | ... | ... | ... |
| TOTAL | . | . | . | . | 93 | 57 | 150 | 79 | 332 | ... | 314 | 62 | ... | ... | ... | 35 | 8 | 35 |

* Counties include such Boroughs and Burghs as are locally situated within the limits of the Counties, or, if surrounded by two or more Counties, then they are included in the County with which they have the longest common boundary. Berwick-upon-Tweed is included in Northumberland.

Veterinary Department, Privy Council Office, 21st October, 1879.

RINDERPEST IN MAURITIUS AND MADAGASCAR.

WE learn from the *Times of Natal* of September 17th, that "a proclamation published by the Lieut.-Governor prohibits the importation of live stock of all kinds from the islands of Madagascar and Mauritius, or from any port lying between the equator and the 30th parallel of south latitude, and between 35° and 36° of east longitude. This action has been found necessary, owing to the rumoured prevalence of a virulent and contagious disease, similar to the rinderpest, in Mauritius, Madagascar, and other islands in the Indian ocean."

Facts and Observations.

ARMY VETERINARY SURGEONS.—Candidates for appointments under the Army Veterinary Department must possess the Diploma of the Royal College of Veterinary Surgeons, and shall undergo a further examination. Successful candidates receive a commission for ten years; pay commencing at £250 a year. At the expiration of the ten years he may be dismissed, or may be selected for further appointments. After serving twelve years he is eligible for promotion to the rank of Veterinary Surgeon of the 1st Class, pay commencing at 16s. a day, rising to 22s. a day after fifteen years' service as 1st Class Veterinary Surgeon. Army Veterinary Surgeons rank as Lieutenants, 1st Class Surgeons as Captains.—*The Chemist and Druggist*.

RABIES AMONG HOUNDS.—Mr. G. A. Bragg, of Moretonhampstead, who has been keeping a pack of harriers, was obliged yesterday, Oct. 13th, to have the whole of them—eleven couples—shot, in consequence of their having become affected with dumb madness. It is said the disease originated with two dogs which were imported from a kennel in Cornwall. They were found after some days to be affected, and were at once destroyed, but they had already bitten some of the other dogs, and one of these showing symptoms of disease was shot last week. It was found, however, to have spread to the rest, and they were also shot yesterday.—*Western Morning News*.

IMPORTATION OF CATTLE INTO CANADA.—A telegram dated October 6th announces that the Dominion Government has renewed indefinitely the existing prohibition against the importation into Canada of cattle from the United States of America.

THE VETERINARIAN, NOVEMBER 1, 1879.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

THE EFFECT OF RAINFALL ON THE PREVALENCE OF PARASITIC DISEASES.

LAST month we referred to the effect of the continued wet on the food of animals and the consequent want of tone in the systems of the creatures which have been sustained for months past on watery herbage. It was also suggested that, independently of the want of quality or proof in the meat so produced, the animals would naturally be predisposed to disease.

There is one important class of diseases of animals to which a wet season is not merely a predisposing but an eminently exciting cause. We allude to those maladies which are due to the invasion of parasites, the germs of which find in the perpetually moist surface or constantly replenished pools a congenial habitat, where they pass through the changes which are preliminary to their residence in the bodies of the higher animals.

Liver-flukes among sheep, and threadworms (strongyles) in the air-tubes of lambs and calves, have been unusually abundant during the past summer and autumn, and had it not been the case that the temperature has been lower than the average throughout there is very little doubt that the maladies which are produced by those parasites would have been far more serious than they have already been. Warmth as well as moisture is an essential condition for the development of parasitic germs, but heat without moisture is inimical to them, hence it is known that hot, dry summers afford the greatest security against parasitic diseases, except in those localities where the surface water is too abundant to be dissipated by the summer's sun.

It is frequently asked how it happens that in wet seasons liver-rot and husk in calves and lambs become prevalent in positions where, in dry seasons, they are never known, and in some cases on lands which, so far as anybody can prove, have never been infected with parasitic germs. The answer

to this query appears to us to be obvious enough. Excess of moisture cannot produce the ova of parasites, in fact, there is only one possible origin for them, and that is the generative system of the mature female worm. It seems, therefore, to follow that this source of supply exists more generally than is commonly supposed; and so long as the circumstances are opposed to the development of the germs no harm results, and nothing occurs to call the attention of the owner of stock to the fact that there are several sheep of his flock which are affected with strongyles or flukes to a sufficient extent to infect the land on which they are grazing, provided that the one indispensable condition, wet, be present.

Flukes in the liver of the sheep, and strongyles in the lungs of calves and lambs, do not necessarily produce so much derangement as to attract the notice of an ordinary observer, and they exist even without being detected by a skilled examiner; it is therefore possible that an animal in apparent health may harbour these parasites, and thus become a means of infecting other animals without any suspicion of the true source of mischief being excited.

The history of parasitic diseases proves that the germs of new generations are widely spread, surely to spring into active existence when the surrounding conditions are favorable, but harmless enough until those conditions arise. Under the present circumstances stockowners should be very suspicious of the existence of parasites whenever a strange disorder appears in the flocks and herds. Several instances have come under our notice of young cattle having been condemned as suffering from pleuro-pneumonia, on account of the husky cough, when a further examination has shown that they were the victims to strongyles in the bronchial tubes, and we should be afraid to calculate how many cattle, in the course of the last few years, have been condemned, by incompetent persons, as the subjects of a disease which had no actual existence.

Latterly the subject of parasitic disease has formed a part of the curriculum at our veterinary schools, and we anticipate that the diffusion of the knowledge of this important section of veterinary medicine will tend to the saving of many valuable animals.

Extracts from British and Foreign Journals.

AN ASININE MYSTERY.

AT this time of the year the cattle-market at Islington presents once a week a peculiarly animated appearance. It is the season for the sale of donkeys. Having faithfully served their masters through the spring and summer months their services are no longer required, and can only be retained except at a serious sacrifice. They come from the heath at Hampstead, and from the Rye at Peckham, from Epping Forest, and from other holiday resorts for the million, and have been engaged in the "penny a ride" interest. With the fall of the leaf, however, there ceases to be a demand for this kind of sportive equestrianism, and it would be simply ruinous for their gipsy proprietors to allow the unsaddled creatures to stand the whole winter through in stable and perform the unprofitable feat of "eating their heads off." Besides these there are hundreds of the same patient tribe that have been temporarily the property of the costermongers of the metropolis from May to October, and while the various fruits and vegetable succeed each other the peripatetic greengrocer and fruiterer can afford to harness a donkey to the shafts of his heavily-laden barrow, but with the approach of winter "trade" becomes dull, and the asses' occupation is gone. Under such circumstances, there is nothing astonishing in the fact that, with bleak November within hail, a large number of the animals in question are taken to market to be sold, and the wonder is—who buys them? To what purpose are they applied by the purchasers? There was a time when the vulgar belief existed that the flesh of the ass was utilised to supplement a scarcity of veal, but in these days of shrewd sanitary supervision such uncomfortable suspicions need trouble no one. It is well known that the ass is not a creature that may be killed and cut up for the sake of its carcase, even as food for the feline and canine species. Its customary leanness would forbid the speculation, to say nothing of the fact that at those establishments where horse-beef is prepared the *employés* have a horror of dead donkeys, holding it beyond dispute that to have the handling of one carries a penalty of bad luck for an indefinite period. There is a vague rumour that at the commencement of winter our surplus donkeys are sent to Holland and employed there in various hydraulic industries; but no one ever yet saw a consignment of asses on board an outward bound Rotterdam

steamer. The case is this, then—annually, say, a thousand donkeys are disposed of within the metropolitan area by the only class that can possibly find a use for them. What becomes of them?—*The Globe*.

FOWL-CROUP AND TYPHOID FEVER.

THE circumstances attending the death of John Phillips recently formed the subject of an official inquiry at Brentford, and deserve a brief notice in these columns. According to the report furnished to us, it appears that the landlord of the Railway Tavern, Acton, finding that one of his fowls was suffering from “croup,” ordered it to be killed and buried; these instructions were, however, not carried out, but one of the tavern servants gave the fowl to Phillips, who took it home and had it cooked for dinner. Phillips, who was a labourer, aged sixty-five, and his wife and daughters and five other persons partook of the fowl, and all suffered from the effects within a short period, the symptoms being diarrhœa, vomiting, and pain in the head. All recovered except the deceased, the subject of inquiry. The finding of the jury was that the cause of death was typhoid fever, brought on by eating a portion of a diseased fowl. It is hardly necessary for us to remark on the unwisdom of the jury in this case, in attempting to give a name to the disease which caused death, as, if the deceased succumbed owing to the unwholesome food he had received into his stomach but a few hours before, he certainly did not die of typhoid fever. The obvious lesson the public should learn from the fatality is, that it is neither safe nor economical to eat the flesh of birds or beasts which have been killed on account of acute disease. To medical officers of health and pathologists the question will probably occur—what was this “croup” that proved so deadly? and the answer is not easy to arrive at. Indeed “croup,” as applied to poultry, appears to be quite a common term, and one used to express a symptom rather than a specific disease—that is to say, almost any fowl disease in which the subject affected gives utterance to a harsh guttural cry at short intervals is likely to pass for croup. Perhaps one of the most common of these is an aphthous affection of the mouth and throat, but this is generally regarded as mild and tractable. Then there is the singularly fatal malady known as fowl-cholera, in which the mouth and windpipe are often found clogged with a viscid mucus, rendering respiration difficult and croupy. It is probable, also, that in some cases of anthrax the breathing may become

noisy and metallic in character, through swelling in the soft parts round the larynx. In the case of either cholera or anthrax, the flesh of the affected bird would certainly be quite unfit for human food, and flesh tainted with anthrax would be not unlikely to produce symptoms identical with those manifested by the unfortunate man Phillips. That poultry are liable to a disease bearing any real resemblance to human croup, and accompanied by the formation of a false membrane, is not, we believe, credited by the best authorities in veterinary medicine.—*Sanitary Record*.

DIVISION OF CARTILAGE CELLS.*

IN a short paper on this subject, Dr. W. Bigelow states his disagreement with Butschli's view that the division of the cell-body always goes hand in hand with that of the nucleus, and that the common case of a single cell with two nuclei is not an instance of commencing division. Bigelow's observations on the cartilage of all classes of Vertebrata lead him to the opinion that division of the nucleus always precedes that of the cell-body. He finds, in fact, cells with constricted (biscuit-shaped) nuclei, cells with two nuclei which are considerably larger than the neighbouring uni-nucleate cells, cells with two nuclei and a faint partition wall. In no case was a septum seen before the division of the nucleus was completed.

Amongst the ordinary cartilage cells of the sclerotic of amphibia and fishes were found some of especially large size, separated from surrounding cells by a great thickness of ground substance, which often exhibited concentric striation, and was stained with gold chloride. They often contained two or three nuclei, and were of very irregular form. Their protoplasm was stained red with gold chloride, instead of bluish like the other cells. The surrounding cells were often arranged radially around these large cells, of the origin and significance of which the author proposes to treat in a future communication.—*Journal of the Royal Microscopical Society*.

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF THE COUNCIL

HELD OCTOBER 2ND, 1879.

Present:—The President; Professors Pritchard and Walley; Messrs. Batt, Blakeway, Cartledge, Cartwright, Cuthbert, Dray, Fleming, Freeman, Gowing, Greaves, Harpley, Moon, Morgan, Reynolds, Robertson, Taylor, Whittle, and the Secretary.

* 'Arch. f. Mikr. Anat.,' xvi (1879), p. 458.

The *Secretary* read the notice convening the meeting.

The minutes of the previous meeting were read and confirmed.

Letters were read from Mr. James Collins, Mr. Anderton, Professor McCall, and Mr. George Williams, regretting their inability to be present at the meeting.

From Mr. E. C. Dray, the Treasurer of the College, withdrawing his resignation of that office.

From Mr. Loch, relative to the supplemental charter, asking for a cheque for £150 for expenses incurred at the Home Office.

The *Secretary* stated that he was directed by Mr. Harpley to present to the College a photograph of the Veterinary Congress in Hamburg, held in July, 1863, containing a portrait of their lamented friend, the late William Field.

On the motion of *Mr. Dray*, seconded by *Mr. Reynolds*, a vote of thanks was passed to Mr. Harpley for his presentation.

Letters were read from Miss Tillett, tendering her thanks to the President and Council for their letter of condolence and sympathy on the loss of her uncle, the late Professor Varnell.

From Mr. Charles Marking, of Topperfield, Essex.

From the Secretary of the Royal Veterinary College, wishing to be informed whether men under the two-years' system would be allowed to come up for examination at Christmas, as he understood that some further extension had been granted. Also the reply, stating that the Council had decided that the examination under the two-years' system would cease in January next.

From W. T. Simmonds, M.D., United States, relative to his diploma from the Havard University, asking whether one year's course of study would be sufficient to entitle him to receive the diploma of the Royal College of Veterinary Surgeons in the event of his being competent to pass the examination.

The Secretary was directed to reply that a two-years' course of study was necessary, in accordance with Bye-law 47.

A letter was read from Mr. William Stuart Low, medical student, Burntisland, Edinburgh, stating that he was a rejected candidate in April, 1876, but obtained the Highland and Agricultural Society's certificate, and asking whether the diploma of the College would be granted to him without additional expense.

The Secretary was instructed to reply that the diploma would be granted on the payment of the regulation fee of five guineas.

Letters from Albert Barr Medd, of Holbeach; F. Payne, of Devizes; and George Rees, Llanboidy, who, having been rejected at the July examinations, and referred back to their studies for twelve months, now applied to know whether they could come up for their examinations at Christmas next.

Reports of the Examinations.

The reports of the July examinations held in London and Edinburgh were read.

Mr. Reynolds moved that the suggestion of the Court of Examiners be adopted, namely, that the rejected candidates should be referred back to their studies for twelve months.

Mr. Taylor seconded the motion.

The *President* thought they could not possibly carry out the suggestion of the Examiners, because the old system expired in January next, and if that suggestion were carried out these men were thrown out for ever; they could never present themselves under the old rule.

Mr. Fleming asked whether the Examiners were aware of the fact

because it would be a very great hardship. If they were acting in ignorance as to the existence of the rule, and the expiring of the chance of the examination in January, they might be appealed to to alter their decision.

Mr. Robertson, as one of the members of the Board of Examiners, said, that point was not taken into consideration; he was therefore willing to propose that these students be allowed to come up in January next.

Professor Walley seconded the amendment, which was supported by *Mr. Harpley*.

Mr. Reynolds having withdrawn his motion, the amendment as moved by *Mr. Robertson* was agreed to.

On the motion of *Mr. Fleming*, seconded by *Mr. Gowing*, the Secretary was directed to inform the Chairman of the Board of Examiners as to the facts of the case.

The *Secretary* read the report received from the Examiners of the Royal College of Veterinary Surgeons, drawing the attention of the President of the Council to the fact that a discrepancy existed between the notation of the record of the Pass Examination and that reported in the proceedings of the Council dated 5th March, 1879.

On the motion of *Mr. Harpley*, seconded by *Mr. Dray*, the matter was referred to the Publication Committee.

Letters were read from *Mr. Hobson* and *Mr. Sharpe*, inquiring whether *Mr. Francis Baxter, junr.*, charged in the Leicester Police Court with larceny, was a member of the Royal College, and also relative to *Joseph Wood*, who stated that he was a member of the College.

The *Secretary* stated that neither of those persons were members, and a certificate to that effect had been forwarded.

Eighteen candidates, holding the Highland and Agricultural Society's certificate, had made application for the diploma, and fees amounting to £28 7s. had been paid. Amongst other applicants was a *Mr. Evan Evans*, who stated that he held the Highland and Agricultural Society's certificate, but as his name was not on the register the *Secretary* wrote to *Mr. Menzies*, who replied that the man's name was not on the list. *Mr. Evans* was therefore informed that the diploma was only for those who held the certificate of the Highland and Agricultural Society.

Mr. Fleming urged the importance of taking every precaution, so that gentlemen applying should be thoroughly identified as being eligible to receive the diploma.

Mr. Robertson said there was no difficulty in identifying the man if he was asked to send his certificate to the Secretary. He thought means should be taken to inform those holding the Highland and Agricultural Society's certificate that they could now obtain the diploma. It could be done by advertisement.

Professor Walley proposed that circulars should be sent to those gentlemen, informing them that they could obtain a diploma on application, and stating the scale of fees.

Mr. Whittle seconded the proposition.

Mr. Fleming said for their own sakes the Royal College should be quite sure that no blunder was made in issuing the diploma, and they should themselves take the duty of discovering if the men were really eligible, and of notifying to the profession that the diploma would be issued.

The *President* proposed that the names of all gentlemen applying for the diploma should be sent to *Professor Walley*, to *Professor McCall*, and to himself to be revised; because there was still a little loophole open for some degree of fraud. A man might be dead, or his son or

brother might get hold of the circular and apply for the diploma. He thought the list of names should be revised by the authorities in Scotland.

Professor Walley's motion was then agreed to, with the addition of the suggestion made by the President.

A suggestion made by Mr. Fleming, that the names of those gentlemen applying for the diploma should be submitted to the Council before it was granted, was agreed to.

The Registrar's report of deaths was read. The report of the Finance Committee was read. The vouchers and receipts for payments during the preceding quarter were examined and found correct. The present liabilities amounted to £172 15s. 11d., which included the parliamentary agents' and the builders' expenses, which the committee recommended should be discharged; this would leave a balance at the bankers, £260 5s. 8d.

Mr. Cartledge moved, and *Mr. Robertson* seconded, the reception of the report, which was agreed to.

On the motion of *Mr. Fleming* the report was adopted, and cheques were ordered to be drawn for payment of current accounts.

The report of the House Committee was read.

Mr. Harpley said he had been asked by Sir Frederick Fitzwygram to bring before the notice of the Council the fact that a freehold property, No. 16, Fitzroy Square, was to be sold. Some of the Council had seen it and thought it a house that would suit the College very well for new premises.

Mr. Fleming moved, "That the matter be left to the House Committee to visit the building, and to prepare a report upon it to lay before the Council."

Mr. Robertson seconded the resolution, which was agreed to.

Resignation of the Secretary.

The *President* said he had a letter to read from the Secretary, announcing his intended resignation. [Letter read.] He laid that letter before the Council with very great regret, and he was sure that no observations of his own were needed to convey the assurance to *Mr. Coates* that the Council received his resignation with very great sorrow.

Mr. Dray said he could quite endorse the observations made by the President. He was one of those who nearly eighteen years ago had had the pleasure of voting for *Mr. Coates* as secretary to the Council, and he regretted very much that his state of health had caused his resignation. He was a man of the highest integrity and moral worth, and in his unremitting attention to his duty he could not be surpassed. The Council would have very great difficulty in replacing him, and he (*Mr. Dray*) regretted the cause for his resignation.

Mr. Harpley said he scarcely knew what to say on the subject. It had taken him by surprise, as it had, no doubt, most of the Council. He thought that, as *Mr. Coates* had filled the position of Secretary of the College for eighteen years, their best plan would be to receive the letter and defer any discussion until the next meeting, which would give them some little time to think over the matter. At the present moment he was not in a position to say anything more about it, and would therefore make that proposal.

Mr. Taylor seconded the proposition.

Mr. Gowing said he fully agreed with the observations that had been made, but he suggested whether if some assistance was furnished

to Mr. Coates he might be induced to remain in the position in which he (Mr. Gowing) was only too happy to see him.

The *President* said that would be discussed at the next meeting.

The resolution was then agreed to.

The *President* read a requisition signed by twenty-two members of the College requesting the Council to call a special meeting to consider the system of competition maintained at the Royal Veterinary College, St. Pancras, which in the opinion of those who signed the requisition was injurious to the profession generally.

Mr. Greaves said, as one of those who had signed the requisition he had been induced to attend the meeting, and the advice he gave to the members was, that, this being a matter between the London practitioners and the Royal Veterinary College, he thought the more straightforward course would be to appoint a deputation and request an interview with the Governors in order to lay their grievances before them. He was overruled by those present, who considered it the more legitimate course to apply to the Council as being the head of the veterinary profession; and in the result it was decided to ask the Council to call a general meeting of the whole profession in order to discuss the difficulty.

Mr. Fleming said the petition appeared to be in proper form, and was quite in accordance with the bye-law. The Council was not in a position to discuss the matter; the only thing they could do was to accede to the petition, which was perfectly legal.

The Secretary was directed to call the meeting for Wednesday, October 15th, by advertisement, in the same manner as was provided in the Charter in the case of the annual meeting, the object of the meeting being specified in the advertisement.

Mr. Fleming gave notice of motion, that no gentleman be allowed to receive his diploma under the age of twenty-one years, and that on presenting himself for his final examination he should produce a certificate of age.

Professor Walley gave notice that at the next Council meeting he would bring forward a motion to discuss the advisability of placing the second summer session between the first and second examinations, instead of, as at present, between the second and third.

Also that, at the next meeting, he would call attention to the bye-laws referring to the admission of medical men and gentlemen holding the diploma of any veterinary examining body recognised by the Council. An anomaly seemed to have crept in which was never intended, for by that bye-law a medical man was exempt from the first examination, whereas a veterinary surgeon must pass the first and second examinations if he wished to obtain the diploma.

SPECIAL MEETING.

Mr. Robertson proposed the adoption of Mr. Peter Taylor's alteration of Bye-law 37, which was carried at the last meeting.

Mr. Whittle seconded the resolution.

Professor Walley said he believed the rescinding of the bye-law was a step in the wrong direction, because it would throw into the Schools a number of men who did not care how long they remained there, and who would make other men as bad as themselves. He would move, as an amendment, that the bye-law be rescinded, but with this proviso: That if the student could not bring to the Board of Examiners and the Secretary of the Royal College of Veterinary Surgeons a certificate from the principal of his college that he had studied during the interval, he

should not be allowed to go up. In other words, if a student had been idly wasting his time he should not be allowed to go up more than three times, because the absolute removal of the bye-law would be the means of such men hanging about the colleges.

Mr. Gowing.—Do not you certify that he is eligible to go up?

Professor Walley said no; they only certified that he had attended a course of lectures.

The amendment was not seconded, and the motion was put and agreed to.

The *President* withdrew his resolution with reference to Bye-law 46.

Mr. Gowing proposed the following alteration of Bye-law 36:—"That should he not pass his third examination, then shall he pay, should he again wish to present himself, a fee of six guineas at each subsequent re-examination, and seven days prior thereto."

The *President* pointed out that it was stipulated in the charter that the examination fees were not to exceed ten guineas. They already received three 3 guineas and 1 guinea, making the 10 guineas, and that could not be increased.

Mr. Fleming suggested that further advice should be taken, and at the request of *Mr. Gowing* the matter was adjourned till the next meeting.

Mr. Fleming then proposed the motion of which he had given notice:—"That in case any student after having attended the prescribed course is prevented by any cause, the fault not being his own, from presenting himself for the one immediately following, by studying one term less than he would by Bye-laws 31 and 32, provided the full number of terms shall have been complied with." At present, unless a certain number of students come up for examination, they were not examined, but must stand over, which was a hardship. As the college had no desire to be unfair to students, there should be some provision made for their protection. He believed that the Bye-law as he had proposed it would be entirely equitable to the students, and he was sure the Council would assent to it.

Professor Walley seconded the motion, which was agreed to.

The *Secretary* was directed to call a special meeting of the Council to confirm the expunging of "Bye-law 37."

(Adjourned.)

SPECIAL MEETING OF COUNCIL, HELD OCTOBER 14TH, 1879.

Present.—*Mr. Dray*, Vice-president (took the chair); Messrs. J. W. Anderton, Cartwright, Collins, Greaves, Harpley, Morgan, Reynolds, Taylor, and the Secretary.

It was moved by *Mr. Taylor*, and seconded by *Mr. Cartwright*, "That *Mr. E. C. Dray* take the chair."

The *Secretary* read the notice convening the meeting.

The minutes of the last meeting were read and confirmed.

The motion expunging the "Bye-law 37," notice of which had been given by *Mr. Taylor* on April 10th, and which had been discussed and adopted at a special meeting of the Council on October 2nd, was now formally confirmed, signed, and sealed, in accordance with the provisions of the Charter.

A Second Special Meeting was then convened.

The *Secretary* said, Now that the expunging of the bye-law had been

confirmed, he wished to ask whether the three students, two of whom had been rejected three times, might be allowed to come up for examination in January next, as the examinations under the old system would terminate in that month.

On the motion of *Mr. Morgan*, the Secretary was instructed to inform the applicants that they could, if they wished, come up for examination in January next.

The *Secretary* stated that he had received two letters, one from Prof. Vaughan in reference to Mr. Charles Parker Lyman, who holds the Highland and Agricultural Society's Certificate, and who had remitted the sum of three guineas. This name was on the list according to date. The other letter was from Mr. Gunn, received that day, who also held the Highland and Agricultural Society's Certificate. He was also in order, and registered in the Highland Society's list of members. He wished to know whether these two gentlemen might be allowed to receive their diplomas.

The matter was allowed to remain in abeyance until the opinion of the three Principals in Scotland was obtained in conformity with the instructions given at the last meeting of the Council.

A form of circular, submitted by the Secretary, was, as amended, ordered to be sent to those gentlemen holding the Highland and Agricultural Society's Veterinary Certificate.

The next subject was to take into consideration the Report of the Deputation Committee in reference to the purchase of premises for the Royal College of Veterinary Surgeons at No. 16, Fitzroy Square.

The *Secretary* read a letter from Messrs. Whyte, Collison, and Prichard, which had been submitted to the last meeting of Council, and also the Report of the Deputation Committee appointed by the Council to inspect the above-mentioned premises. It stated that they had inspected the premises, and that they were of opinion that they were most eligible and well suited for the purposes of the College, and they recommended the purchase of the same.

Mr. Greaves, as one of the deputation, stated that they were very much pleased with the position of the premises and with their character, both internally and externally. They were anxious that the Council should become possessed of them, because in every sense of the word they were far more eligible than the premises they now occupied. He proposed that a surveyor should be at once called in to value the property, and if the surveyor's opinion was that it was worth the money, then it ought to be purchased.

Mr. Morgan said, that, as far as he and some friends saw of the property from the outside, it seemed a very eligible one. He should be glad to second Mr. Greaves's motion for the appointment of a surveyor; but the Council had scarcely power to order the purchase until the next meeting of Council.

Mr. Harpley said he had also inspected the premises, but he was doubtful whether there would be frontage enough. No doubt it was a comfortable house as a residence, and there was more space in which to stow away the property of the Council than there possibly could be found on the present premises; but he hoped the Council would fairly take into consideration all the difficulties before they came to any definite conclusion regarding its purchase. There was, no doubt, a very nice room which could be turned into a museum; but certainly the rooms were not so nicely arranged as to be in every respect available for the purposes of the College. There was a difficulty as to a lecture-room; and one of the objects in purchasing another house was that there

should be a room where lectures, interesting to the profession, could be delivered.

Mr. Collins thought that, in discussing this question, the sort of building that was actually required for the College ought to be taken into consideration. The proposed house was, no doubt, larger than the present; but was it in a better position than Red Lion Square? There was, he thought, a deficiency in the frontage. If the property were once purchased, and afterwards found to be unsuitable, he reminded the Council that it would be a burden upon them for the rest of their natural lives. He proposed that an advertisement should be inserted in the newspapers indicating the style of property required.

Mr. Taylor seconded the motion, remarking that it was absolutely necessary for the interests of the profession that whatever new premises were fixed upon they ought to have a good, bold frontage.

Mr. Greaves's motion for the appointment of a surveyor to inspect the premises and report thereon was then put and carried, as was also the motion of *Mr. Collins* recommending the insertion of an advertisement for suitable premises.

The House Committee were instructed to draw up an advertisement.

The names of *Mr. Blakeway*, *Mr. Collins*, *Mr. Greaves*, and *Mr. Taylor* were added to the House Committee, to whom the appointment of a suitable surveyor was relegated.

The *Secretary* was instructed to send an answer to *Mr. Prichard* to the effect that a surveyor had been appointed to inspect the property and to report to the Committee.

The Council then adjourned.

OPENING OF THE SESSION AT THE ROYAL VETERINARY COLLEGE.

THE Sessional Course of Instruction was commenced on October 1st, in accordance with established custom. The meeting was well attended, and lacked none of the interest attaching to these annual gatherings. Besides the Students—new and old—and their parents and friends, there were present several Members of the Court of Examiners, town and country Veterinary Surgeons, Inspectors to Local Authorities, Army Veterinary Surgeons, Members of the Medical Profession, and private gentlemen.

The governing body of the College was also well represented, there being present Lord Arthur Somerset, General Sir Frederick Fitzwygram, Bart., Sir Paul Hunter, Bart., Mr. H. G. Sutton, and Mr. Harpley.

As soon as the assembly were seated,

Professor Simonds rose and said: We are honoured on this, as on many former and similar occasions, with the presence of several noblemen and gentlemen who take the deepest interest in veterinary science. Many of these gentlemen are connected also with this Institution in the capacity of governors. I have now the very pleasing duty of introducing Sir Paul Hunter to the meeting and to ask him to have the kindness to take the chair.

The *Chairman*: Mr. Principal and gentlemen, it is with great satisfaction that I occupy this chair. I did not expect to have the pleasure of being here so soon after I had filled the office of President at one of your opening meetings some two or three years ago. I told the Principal that should no one else be able to come that I should have the greatest pleasure in filling the gap and presiding on this occasion. My duty is to ask Dr.

Cobbold to deliver the address. Now you know Dr. Cobbold a great deal better than I do. You know that Dr. Cobbold is an enthusiast on his pet subject—helminthology, I believe,—a very long word. Now Dr. Cobbold being an enthusiast in helminthology I beg leave to say I am an enthusiast in shoeing. Both are exceedingly useful in their way, and I am not prepared to say that the knowledge of farriery will not conduce as much to the comfort of the horse as even the destruction of the worms in his stomach. Gentlemen, I ask you to pay attention to the address which will now be delivered by Dr. Cobbold.

[We give the address in full in another part of the Journal.]

On the conclusion of the address the name of the winner of the Scholarship was announced, after which the distribution of Medals and Certificates took place, the Chairman adding some well-timed and pertinent remarks to each recipient in turn.

The Scholarship of £25 Per Annum for Two Years was awarded to Mr. C. E. Cockram, of Weymouth.

Honorable Mention was made of Mr. Thomas Pottinger, St. John's.

COLEMAN PRIZE.

Silver Medal awarded to Mr. W. F. Smith, Downham.

Bronze Medal to Mr. E. S. Shave, London.

Certificate of Merit to Mr. W. A. Edgar, Dartford.

Assistant Inspector, Royal Agricultural Society; Certificate awarded to Mr. W. A. Edgar and Mr. James Mills.

„ „ *Smithfield Club (1878); Certificate* awarded to Mr. Joseph Bainbridge and Mr. James Blakeway.

Certificates of Distinction.

| | |
|---------------------|------------------|
| Mr. E. E. Batt. | Mr. James Mills. |
| — James Blakeway. | — W. F. Smith. |
| — W. A. Edgar. | — J. D. Thomas. |
| — Titus Littler. | — A. C. Turner. |
| Mr. W. H. McCaldon. | |

Clinical Clerks.

| | |
|--------------------|-----------------|
| Mr. J. Bainbridge. | Mr. T. Littler. |
| — J. Blakeway. | — J. Mills. |
| — A. Cox. | — T. Pritchard. |
| — W. A. Edgar. | — W. Roach. |
| — W. R. Emery. | — E. S. Shave. |
| — H. Gibbins. | — F. J. Short. |
| — C. H. Golledge. | — W. F. Smith. |
| — F. T. Hart. | — J. Soulsby. |
| — H. J. Kelly. | — J. D. Thomas. |
| Mr. S. O. Langley. | |

Monitors.

| | |
|---------------------|-----------------|
| Mr. J. Bainbridge. | Mr. J. Mills. |
| — W. A. Edgar. | — W. F. Smith. |
| — W. T. Emery. | — J. D. Thomas. |
| Mr. W. H. McCaldon. | |

The *Chairman* : Gentlemen, I assure you I find myself in an uncommonly difficult position. I came here having got up all about my visit to Alfort. Now quite by accident I am delighted to find that Dr. Cobbold has been there before me and he has told you all that he saw there and what he told

you was all perfectly true. But I venture to say that there is not a single individual amongst you who is not glad that he is not there, because, first of all, your entire freedom would be taken away. You would be shut up from week's end to week's end inside that magnificent building, which I admired just as much as Dr. Cobbold did. You would be shut up in a beautiful avenue of well-trimmed trees, with comfortable seats, no doubt, for study, and nice books to be studied; but you would always have in the summer time to wear a white dress and in the winter to wear a black dress. I went into the botanical gardens and was very much struck with the arrangement of the beds there, but not being a botanist I did not obtain much information. I gathered the idea which you always do in any French institution that you go into—that the theory is magnificent; but I doubt very much whether the practice is equal to that of this College (applause). I cannot say too much about the attention and politeness that was shown by the Director. Everything was immediately under his thumb: when he wanted the lecture to begin he touched a bell and everything was silent at once. There was something there which might, perhaps, be followed with advantage, and I would impress upon you the importance of being punctual and attentive at lectures, so as to do all that you can to uphold the credit of this College. I walked about the gardens. Unfortunately, I was not able to give more than half a day to this magnificent institution, for such it is; but I wished to find out the class of men who came there to be instructed, and I must confess in looking at their countenances I was very much struck with their melancholy appearance (laughter). I made comparisons between them and the faces I have observed at times when I have come into this College; for I have slipped in here when none of you knew what I was about or who I was, studying how the thing worked and how you were getting on. I do not want to be sneaking about, and I do not intend to come sneaking about (applause), but if anything goes wrong here you may rely upon it that we hear of it in the board room. We do not hear of much wrong I am happy to say: things generally go right—but we have all made up our minds, as Governors, sitting in that room, that if we intend an alteration to be made in anything it shall have a fair trial; and we expect every one of you, from the Principal to the porter (laughter), to give it a fair trial; because this College must be such a one that no school in Europe can surpass it (applause). Walking about with the Director of Alfort I said to him, "I am afraid your young men look a little melancholy." "Ah!" he said, "you should see them how they are lighted up when I am speaking to them" (laughter). Well, upon my honour, when I am addressing you I feel very much as the Director of Alfort does (applause). I see bright countenances here which I did not see at Alfort; but I dare say some day or other I shall go there again, and then I hope and trust the Director will not ask me to address the pupils in French. One thing I may mention, should any of you wish to go to Alfort to visit the college, if you will take the trouble to get an introduction from one of your professors you will not possibly meet with the disappointment of being asked to come another day. Some gentleman from this College wished to enter there as a student, and he thought by going and asking permission to do so he would be taken on, and I make no doubt he was very much disappointed at not being able to join the classes. All you have to do is to get a letter from your Principal and say that you wish to see the institution, and then they will do everything they possibly can to show you what there is to learn. I should like to mention the happy result that has followed from our having Governors in this institution who are connected with the Royal Agricultural Society. Having two or three governors on our Board so connected, we are able to talk matters over

and to point out in what way we can help and assist each other. I am happy to say we are doing that in the most satisfactory manner, and that we have some of our members who are acting inspectors to the Society.

There is one other thing which I was going to mention about Alfort which rather struck me. I noticed that Dr. Cobbold, of course, looked out for the worms (laughter), he would naturally do so. I do not say that in any mockery to Dr. Cobbold; because one who has done more for humanity by opening the eyes of the medical profession does not exist than Dr. Cobbold (loud applause). I only mention that he looked out for the parasites and went also into the botanical garden. Now, I looked out for horses, but I could not find the sick horses; they were not there. I said, "Where are the sick horses?" I want to see what you are doing with animals that have all kinds of diseases." "Oh!" they said, "if you come to-morrow morning at eight o'clock you will see the horses that we have to doctor; they are brought in at that hour, but we have none in the establishment." The result is that I do not think the pupils have a very good chance of learning practically the diseases of the horses. I was very much interested in their magnificent riding school, and I asked, "What do you ride?" The reply was, "We ride the horses that we teach the pupils about." But these were horses sound and strong. I said to the pupils, "Are you taught anything else?" "Yes, we are taught to mow and to clip horses and sheep." "What else?" "Oh, we are taught to reap and to make butter," so that we may know whether the milk is all right. You, however, are spared a great deal of that. Dr. Cobbold gave you a rub about being, I suppose, impolite, because, he said, the French were naturally polite. Now, I do not at all agree with Dr. Cobbold that the French are a bit more polite than we English people (applause). I have had some very rough words with Frenchmen before now, and I do not believe in the extra politeness of the Frenchman. He takes off his hat certainly, but he will give you a poke in the ribs whenever he can (laughter). We are very good friends with them, and I hope we shall be; and we shall be very glad indeed to see Frenchmen join this College, for I think we may help one another very much indeed. There is no difficulty about the language here. You know we have introduced French. I do not know how you like it, but you must try it; and I hope to hear that some of you are good French scholars. If we have introduced French, we can certainly teach English; because here is a gentleman, Mr. Thomas, who came here only able to speak Welsh; but during the time he has been here he has been taught English, and has worked himself up to the magnificent position you have seen him hold to-day (applause); therefore, you do not know what you can do till you try. With regard to French, I may say I regret not having known this College some twenty years ago; because, I dare say, if I had I should have done better than I did once at a French fair. I went to a French fair with a friend of mine to buy some cart horses at Caen. My friend said, "I expect we shall be very much 'done.'" I thought we should, too. But, luckily, going up the street we found a great placard showing the names of all the maladies, external and internal, of the horse given in French. I said to my friend, "We are right now; we will buy this sheet of paper; we have plenty of time to go in and study it, and to see what is the French for splint and spavin, and what is the name when he turns his toes out and in, and all that" (laughter). Well, they brought my friend a horse with a tremendous splint, and another one that was spavined; but, however, we were quite up to the mark for the occasion. Afterwards the dealer came round, and said, "Monsieur, *je connais*, I think you are a veterinary?" I said nothing, and he went on, "I tell you what it is, Mr. Veterinary, I have a very great wish to sell those horses to your

master"—offering me a bribe. That is what you term politeness (laughter). Well, the whole matter passed off; my friend bought his horses, and did very well. And now I am very much obliged to you for having listened to all the nonsense I have addressed to you (applause).

Mr. Sutton.—It now becomes my pleasing duty to move a vote of thanks to Sir Paul Hunter, who this day has so ably filled the office of Chairman. I am sure you have all been most interested and instructed by his able speech, especially with regard to the French college. I do not, however, think you need fear that it will surpass this College; for I am sure that this College will hold its own wherever it is spoken of. We have all been greatly interested in Dr. Cobbold's address, and are very grateful both to him and to the Chairman for the part they have taken on this occasion.

The resolution was carried by acclamation.

The *Chairman*.—I am very much obliged to you. All I can say is, go away and be good boys for the rest of the year.

ROYAL VETERINARY COLLEGE.

QUARTERLY MEETING OF GENERAL PURPOSES COMMITTEE.

THE usual QUARTERLY MEETING of the GENERAL PURPOSES COMMITTEE of the Royal Veterinary College was held in the Board Room of the College on Tuesday, October 14th.

Present: Sir C. S. Paul Hunter, Bart., Sir James Tyler, Col. Kingscote, C.B., M.P., Lord Arthur Somerset, Mr. M. J. Harpley, Mr. Barnard Holt, and Mr. James Collins.

On the motion of Sir James Tyler, *seconded* by Mr. Harpley, Sir Paul Hunter was unanimously elected Chairman of the Committee for the next year. A cordial vote of thanks was also accorded to the late Chairman, Mr. G. D. Whatman, for the highly efficient manner in which he had filled the position for upwards of four years.

The accountant read the Quarterly Statement of Receipts and Expenditure, after which the names of seventy-seven new subscribers were submitted to the meeting and declared elected.

The Principal's Quarterly Report was read, from which it appeared that thirty Freshmen had entered on their studies at the beginning of the present Term.

"That the 'Cheap Practice,' instituted last spring, had been continued during the vacation with satisfactory results; also, that during the past three months 197 horses, 12 dogs, and 4 lambs, had been admitted into the Infirmary for treatment."

It was further reported that several visits of inspection had been undertaken on behalf of the Royal Agricultural Society in consequence of the existence of disease among cattle.

Mr. E. S. Shave was, subject to the approval of the Governors of the College, appointed to the post of Assistant Demonstrator of Anatomy, rendered vacant by the resignation of Mr. E. L. Dixon.

It was ordered that a glass roof be erected over that part of the College premises where the "Cheap Practice" is carried on, for the purpose of affording the necessary shelter.

Some further business was transacted, and the meeting terminated with a vote of thanks to the Chairman for presiding.

VETERINARY MEDICAL ASSOCIATION.

ROYAL VETERINARY COLLEGE, 44TH SESSION, 1879-80.

THE First General Meeting of the members of the Veterinary Medical Association was held in the Lecture Theatre of the Royal Veterinary College, on Tuesday, 14th October, 1879, at 6.30 p.m. The PRESIDENT, PROF. PRITCHARD, occupied the chair.

A general invitation for this meeting had been issued by order of the President to all students at the Royal Veterinary College. Fifty-three visitors responded to this. Twenty-three members, the President, and the Secretary also attended.

The minutes of the last meeting of the Forty-third Session were read and received.

The awards of the Session 1878-79 were then announced and distributed.

Messrs. F. C. Gooch, H. Redford, T. J. Rippon, A. S. Auger, E. H. Scott, E. E. Bennett, E. C. Cockram, were then proposed as fit persons to become members of the Association.

The *President* announced the subjects for prize competitions for the coming session. He then officially intimated the nature of the agreement between the Council of the Association and the Governors of the College, whereby the library is now available for use by *all* students at the Royal Veterinary College.

The *Secretary* then read his report of the proceedings of the Association during the Forty-third Session, as sanctioned by the Council.

MR. PRESIDENT AND GENTLEMEN,—The objects of the Veterinary Medical Association are :

1. Meeting together of persons connected with veterinary science for discussion of proposed subjects.
2. Awarding prizes to student members for superior attainments.
3. Formation of a library of reference and circulation.

I believe we are in a position to congratulate ourselves that we have been thoroughly successful in carrying out these objects during the 43rd session, the proceedings of which I have now to bring before you. In all there have been twenty-two General Meetings of the Association during the session 1878—79, at each of which there has been an average attendance of about thirty “persons connected with veterinary science,” members of the veterinary profession, students at the college, and visitors, professional and non-professional. The discussions have been varied, lively, and in many cases very original, and the “drawing out” of scientific ideas, the energy of argument, and tact of offence and defence displayed in these debates must have been highly beneficial to all of us who have attended the meetings. Such training is of great value to a veterinary surgeon. In few professions more than ours do men require to look more frequently under the surface to detect deceit and the cunning malevolence of ignorance ; and the juvenility of our profession necessitates that members of it be the better prepared to withstand such slights as members of older professions endeavour to inflict on them. The votaries of human medicine, the elder brothers of our science, are beginning to see that we are no longer in the confiding stage of childhood, but are prepared to question her dictates, to look into matters for ourselves ; they begin to respect and sympathise with us accordingly. The lawyer pompously cross-questions his veterinary witness, browbeats,

bullies, and pushes him to prevarication, but concludes "that man is not by any means a fool." Dignitaries of the Church begin to learn that our opinion is to be trusted, and possibility of referring to a veterinary examination of a horse for soundness has rendered obsolete the saying "never buy a horse from a bishop." Physicians, lawyers, and clergymen thus feel that this new profession is beginning to assert with force its title to a place among the "learned bodies." The military man, though occasionally an old cavalry officer dabbles in "horse medicine," recognises the improved health and stamina of his troop horses resulting from strict veterinary supervision. As we sow so shall we reap! Not a little of the improved aspect of the profession is due to the training given by students' societies to the coming race of practitioners. Among such societies ours is the oldest one in the veterinary profession, has the greatest influence, and can boast of having included in its ranks men whose present professional position vouches at once for their intrinsic worth, and the success of the training to which they have been subjected. In the supervision of our register of members, in which I, as secretary, have been recently engaged, I have noted that, save where the "grim tyrant Death" has interfered, a successful career as a constituent of this Society has been paralleled subsequently by progress in the profession in which we are all interested; nor is it in one only of the numerous types of the veterinary practitioner that we note this, we see it at every turn, whether in the wide range of country practice, in the sharp business of cities, with our armies in the field, or in the professorial chair, our constituents come to the front. Long may it be so; we have as yet no cause to fear a decline in the progress of our Association! When the Association was founded it was *the* Veterinary Society. Practitioners and students alike took part in its debates, and to each set of members it awarded prizes; but professional progress necessitates division of labour, and practitioners' societies arose throughout the country, when, in the struggle for existence, the Veterinary Medical Association assumed its normal position in the veterinary system of this country as the students' society of its largest college. Its certified members, passing into practice in various parts of the country, have originated local societies, but many of them retain their feelings of respect for the old Society unaltered. We owe to them many an instructive specimen and many a kind hint from their stores of experience, and from their sympathy we derive not a little encouragement in our labours. Some of them give us their personal encouragement by attending at our meetings, and others by performing with regularity and energy the duties of *Members of Council*. To these latter gentlemen we are indebted for some sterling work during the past session—work which will give much increased stability to the Association. By frequent meetings they have revised the rules and regulations, a work, I can assure you, by no means as easy as it looks, and they have negotiated a measure which will much increase the privileges of members. Thus, henceforth you will have the luxury of a reading room, where the library of the Association may be fully utilised for study and reference, and where the different periodicals taken in by the Association will be placed for your advantage. The imperfect use made of these periodicals during the past session indicates that further facilities for consulting them were necessary. The Council has decided that the following be added to those already taken in:

Journal of Anatomy and Physiology, Transactions of the Pathological Society, Students' Journal.

The full list will be found on our notice board. The books of the

library are now fully catalogued, and reference to the list will show that they number about 1450 volumes. With such at your disposal you will little need to consult other sources, and will have no excuse for imperfectly "working up" the bibliography of your essay subjects. Recently we had reason to regret the absence of the newest professional works, but this is now corrected, as reference to the catalogue will show; none of us will question that the funds of the Association are thus well spent. Not the least onerous work of the Council is the adjudication of awards such as are announced on the prize list. The "SPOONER PRIZE EXAMINATION" was conducted on the evening of the 24th March. Questions in anatomy, chemistry, and botany were given for the written examination. The answering of the botany questions was by no means satisfactory; in future the Council hopes that the application of this important science to veterinary medicine and surgery and hygiene will not be almost totally neglected by students. The candidates, of whom four presented themselves, were examined *vivâ voce* in surgery and medicine. The decision of the examiners was:

Gold Medal.—Mr. William Frank Smith, of Downham Market.

Certificate of Merit.—Mr. William Alston Edgar, of Dartford.

The answering was highly creditable; as last year, the marks for the *vivâ voce* were most satisfactory.

A well-earned silver medal was awarded to Mr. Nicholson Almond for his preparations "Illustrating the manner in which the cranial nerves emerge from the cranium." The excellence of this gentleman's specimens demanded an unhesitating favorable decision, though no others were sent in. These are on the table for your inspection. One essay on "*Eczema Epizootica*," was placed in the hands of the secretary. The members of Council examined this, and concluded that it is worthy of the Association Silver Medal. On opening the sealed envelope which accompanied it, the author was found to be Mr. William Frank Smith. The Council, by a resolution of February 13th, 1879, decided that, the rules having been so recently modified, the date before which the preparations and essays in competition for the silver medals must be sent in be the last day in May as heretofore, and not the last day in March, as it will be in future according to the modified rules. In all eleven essays were read at the general meetings during the past session. Mr. DIXON, M.R.C.V.S., late Assistant Demonstrator of Anatomy at the College, favoured us with a paper on "*Distemper as affecting the Dog*." The discussion on this occupied two nights of meeting and it ended with a remarkable specimen forwarded to the Association by Captain Russell, of Grantham, of "*Diffused Encephaloid*," and a case of "*Ventral Uterine Hernia of the Bitch*," drew our attention to *Canine Pathology*. Mr. W. F. SMITH's paper on "*Breeds and Breeding of Cart Horses*," and Mr. W. BEACH's essay on "*British Sheep, and the Management of a Flock on a light land Farm*," are valuable contributions to that science which is termed *Zootechny*. They illustrate the effects of artificial selection. Mr. Beach, in the elaboration of his subject, prepared specimens illustrating variations of the skull in the principal British breeds; these he has presented to the Association, and for them he has received the thanks of the Council. A valuable series of preparations of the "*Petrous Temporal Bones*," from Mr. NICHOLSON ALMOND, was similarly acknowledged, and to that gentleman we are indebted for our only paper on pure pathology—his essay on "*Inflammation*." The theories therein placed under our notice should be well known to all veterinary surgeons as the most recent opinions of the leading authorities on the subject. His theory of treatment may be seen in the *Veterinarian*, May, 1879. Mr. BLAKEWAY read a paper on "*Specific Ophthalmia as affecting the Horse*," and this,

with a specimen of disease of the eye of the cow, by Mr. Golledge, are our contributions to *Ophthalmic Surgery*. *Operative Surgery* received attention from us in the following papers:—Mr. GEO. GARTSIDE MAYOR on "*Herniæ*;" Mr. STEEL on "*Castration*." I may be allowed to allude to the latter as having directed the attention of the members to the prominent position which the subject of "*Cryptorchidism*" occupies in the minds of the professional public at the present time. And very opportunely Messrs. SLIPPER and SHIPLEY, brought forward the case of "*Post-mortem examination of a Pig*," which may be read in the April number of the *Veterinarian*. Mr. GREGORY drew our attention to "*Tetanus*," and Mr. BAINBRIDGE to the always interesting subject "*Navicularthrititis*," which was illustrated with specimens by Messrs. Talbott and Blakeway, the latter giving us a case of "*Navicular Disease in the Hind Feet*." Mr. GOLLEDGE kept us well occupied in learning and discussing his views on "*Foot Rot*," reminding us that the sheep is by no means unfrequently our patient. While Mr. TITUS LITTLER sustained his hereditary reputation for *Helminthology* by his paper on "*Equine Parasitism*." The same branch of science was brought under our notice by Mr. Lepper's case of "*Strongylus armatus in the Kidneys of a Colt*." *Generation and Development* found notice in our examination of specimens of "*Cartilaginous Cervix Uteri of a Heifer*," and the "*Generative Organs of an Hermaphrodite*." The following other specimens were examined:

"Perforation of Soft Palate by Overgrown Molar" (President). "Dilatation of the Oesophagus" (President). "Tuberculosis Hepatitis" (Mr. Golledge). "Cystic Disease" (Mr. Blakeway). "Atrophy of Posterior Lobe of Right Cerebral Hemisphere, with Communication of a Case of Serous Cyst of the Brain" (Mr. T. Fletcher). "Fracture of the Metatarsus" (Mr. W. F. Smith). "Enteric Disease" (Mr. Cattrall). "Rupture of Tarsal Ligaments" (Messrs. Davy and Steel). "Complicated Ringbone" (Mr. Steel). "Pericarditis" (Mr. Steel).

Careful examination of the above-mentioned essays has been made by a Committee of Members of the Council. Their report is as follows:

Honorary Fellowship (conveying "Special Thanks of the Association").—Messrs. Beach, Dixson, Mayor, W. F. Smith, Littler, Golledge, and Bainbridge.

Association's General Meetings Prize.—Mr. Nicholson Almond.

It was decided that the latter prize assume the form of a case of surgical instruments. I have no doubt you will sanction the award, with your sincere congratulations to Mr. Almond on his success.

The number of visitors at our general meetings has been quite up to the average, and we owe to many of them a debt of gratitude for valuable opinions expressed during the discussions. We enrolled twenty-eight new members, an increase of six on the preceding session. Three passed their Diploma Examination before the Royal College of Veterinary Surgeons, and obtained the Certificate of Membership.

At our first meeting on the 15th Oct., 1878, the following gentlemen were elected Student Vice-Presidents for Session 1878-79:—Messrs. Donald Gregory, Nicholson Almond, Geo. Gartside Mayor, T. A. Husband, T. W. Lepper, F. Gowland Rugg.

We owe thanks to these gentlemen for the able manner in which they have performed the duties of their office.

The officers of the Association of the Session 1877-78 were re-elected to their respective offices. The President has occupied the chair at many general meetings and at all meetings of Council.

The Secretary has endeavoured to give as accurately and fully as possible the minutes of the Council and General Meetings of the Asso-

ciation. He has also drawn up for the Council the Report of the Spooner Examination Committee, and the Revised Register of Members, &c. In performance of his duties as Librarian he has revised the Catalogue of Books in the Library, and drawn up the Library Report.

I believe, gentlemen, that we may conclude our review of the Session 1878-79 with the assurance that the Association is in every way vigorous and flourishing, and that we retain no business to retard our advance during the Forty-fourth Session, 1879-80.

Certified Members, 1878-79.

| | | | |
|------------------------------|----|--------------------------------|----|
| George Crane | | (H. F. and F.) Titus Littler . | 7 |
| Hunting . | 1 | William Robt. | |
| Samuel Oxtan | | Emery . . | 8 |
| Langley . | 2 | (Sp. Cert. M.) William Alston | |
| Alfred Charles | | Edgar . . | 9 |
| Turner . . | 3. | (H. F. and F.) Charles Hed- | |
| (H. F. and F.) Joseph Bain- | | worth Gol- | |
| (Essays, S. M.) bridge . . | 4 | ledge . . . | 10 |
| (H. F. and F.) William Frank | | James Ingham | 11 |
| (Sp. Gold M.) Smith . . | 5 | Ernest Edwin | |
| (F.) James Blake- | | Batt . . . | 12 |
| way . . . | 6 | Fk. John Short | 13 |

A vote was unanimously passed that this report be received.

The following gentlemen were then elected "Student Vice-Presidents" for the coming session :—Messrs. Slipper, Mayor, Lepper, Villar, Gregory, and Talbott.

A request was then made for the names of gentlemen willing to produce papers for discussion during the coming session ; but some difficulty existing in respect to a paper for the next night of meeting, the President undertook to engage the attention of the members on that occasion.

Mr. G. A. Banham, M.R.C.V.S. (Spooner Gold Medallist), then read a paper introductory to the study of disease ; and discussion of this was adjourned until the next night of meeting, as proposed by Mr. Huband, seconded by Mr. Beach.

The meeting then terminated.

JOHN HY. STEEL,
Secretary.

LIST OF PRIZES AND AWARDS PRESENTED AT THE COMMENCEMENT
OF THE WINTER SESSION, 1879-80.

SPOONER PRIZE EXAMINATION.

Gold Medal.—Mr. William Frank Smith.

Certificate of Merit.—Mr. William Alston Edgar.

ASSOCIATION SILVER MEDALS.

For Prize Essay.—Mr. William Frank Smith.

For Prize Anatomical Specimens.—Mr. Nicholson Almond.

PRIZES, &C., FOR ESSAYS READ AT THE GENERAL MEETINGS OF THE
ASSOCIATION.—SESSION, 1878-79.

For the Best of all the Essays Read, Five Guinea Prize.—Mr. Nicholson Almond for his essay on "Visceral Inflammations."

Honorary Fellowship Certificates.—Wm. Beach, for his essay on "British Breeds of Sheep, and the Management of a Stock on a Light Land Farm ;" E. Lionel Dixon, M.R.C.V.S., "Distemper of the Dog ;"

G. Gartside Mayor, "Herniæ;" W. F. Smith, "Breeds and Management of Cart Horses;" Titus Littler, "Equine Parasitism;" C. H. Golledge, for his essay on "Foot-root;" J. Bainbridge, "Navicular Arthritis" (placed in the order of the Committee Report).

The following gentlemen have received

Fellowship Certificates.—Messrs. Gregory, for his essay on "Tetanus;" Blakeway, "Ophthalmia."

The following gentlemen have received the thanks of the Council of the Association for presentations:—Messrs. Nicholson Almond; W. H. Beach.

The following gentlemen have received the thanks of the Members for Specimens forwarded for inspection at the General Meetings:—The President; Captain Russell, of Grantham, M.R.C.V.S.; Messrs. C. Hedworth Golledge; Slipper and Shipley, of Yarmouth, M.R.C.V.S.; Harry Talbott; Blakeway; Lepper; Penhale; Hunting; T. Fletcher; W. F. Smith; Cattrall, M.R.C.V.S.; E. M. Davy, M.R.C.V.S.; W. Almond; J. H. Steel, M.R.C.V.S.

JOHN HY. STEEL,
Secretary.

THE SCOTTISH METROPOLITAN VETERINARY MEDICAL ASSOCIATION.

THE Quarterly Meeting of this Association was held in the London Hotel, Edinburgh, on Wednesday, the 24th September. The President, Mr. Rutherford, Edinburgh, occupied the chair, and there was a large attendance of members.

The *Chairman* remarked that the meeting should express its great satisfaction at the arrangement which had been come to with the Highland and Agricultural Society, according to which members now required to undergo only one examination. It was desirable to express their sense of the great benefits which the profession had derived from the interest which the Highland Society had taken in them, both as a body and individually. He thought the maintenance of two examining bodies was anomalous, and that the interests of the profession would be best served by the amalgamation which had been brought about, and the holding of one examination by one examining body. He moved that the society express its gratification at the arrangement.

The motion was seconded by *Mr. Waugh Stirling*, and on being put to the meeting was carried unanimously.

Mr. Reid, V.S., Inspector, Leith, then read the following paper on the

"INOCULATION OF CATTLE FOR PLEURO-PNEUMONIA."

"More than thirty years have elapsed since pleuro-pneumonia was introduced into this country, and everything which the veterinary profession could devise has been tried to effect a cure, but without a successful result. So violently did the disease rage, and so futile were the efforts made to arrest its progress, that it became a very serious matter to the feeder and breeder of cattle. A representation of their grievances was laid before the legislature, and after taking the advice of prominent members of our profession, and practical agriculturists, an Act was passed which had for its object the expulsion of this scourge from our shores. Act succeeded Act, and Order after Order was issued from the

Privy Council, and now we have the Act of 1878, which provides for compulsory slaughter and isolation or restriction for fifty-six days. The profession knows well that even this time is too short for the object in view, and that a period of three months would at least be required. Alongside of this Act, and working in a manner hand in hand, comes Mr. Rutherford with a new idea, or rather an old one revived and clothed in a new form—inoculation. Mr. Rutherford, working against the private convictions of the cow-feeders, gained a footing which gradually spread, till now nearly one-half of the cows in Leith are under his care. Great credit is due to those cow-feeders who first put their animals under his knife. They nobly threw aside their prejudices and private opinions, and unreservedly put their stock under his care. The result of this, in my opinion, demonstrates the complete success of inoculation, which I will try to prove by statistics. At the last census in May we had in Leith 530 cows, and for the four years preceding the following were the numbers attacked with pleuro-pneumonia:—1874-75, 155; 1875-76, 90; 1876-77, 107; 1877-78, 90—showing an average of 110 cows brought to the slaughter-houses affected with this disease. This year only 38 were affected, the disease being confined to thirteen byres occupied by 138 cows. I attribute even this heavy mortality to the carelessness or negligence of those who have accepted inoculation, as the delayed inoculating the new animals they purchased until, as they said, the disease would make its appearance. The byres in which inoculation is now performed were generally hotbeds of disease, but since then they have all been comparatively clear. In these byres last year there were out of a total of 60 cows, three failures from inoculation, and nine bought in beasts were affected. The remaining 26 were in byres where there had been no inoculation, and in which there were 78 cows. I do not at the present time give to inoculation a curative power, although it is somewhat peculiar that where this disease comes into the cow shed, and inoculation is successfully performed, you may with safety say that after the expiry of twenty days there will be no fresh case. We all know that the disease is a long time in the system before it is seen, even to the practical eye, but by the simple process of inoculation many a case is nipped in the bud. The Act of 1878 has signally failed in two, and if pleuro-pneumonia cannot arise spontaneously, in three instances. In the first and second cases there were 62 and 68 intervening days, and in the third case nearly six months. When Mr. Rutherford introduced inoculation into Edinburgh and Leith, I had under my notice, I think in all, 9 deaths by it, but by careful attention and experience, he reduced the risk to a minimum, and I have had no fatal case to record since January. I would seriously advise those who have not tried inoculation, and still suffer under this insidious disease, to give it a fair trial, and they will in a short time be enabled to say what others have done before, viz., that it would have been to their profit if they had taken advantage of this operation long ere this. I would also advise those who have taken advantage of inoculation, and are acquainted with its benefits, to continue the process even though their stock at the present time is healthy. Every fresh increase to their stock should be immediately inoculated, and there will be no cause for complaint, as by that means they will for ever banish pleuro-pneumonia from their premises. I think it well becomes us, as an association of veterinary surgeons, to seriously study this subject, so that we may give out no uncertain sound as to the benefits to be derived from inoculation. We should also show the Legislature that instead of paring away at the outside they should strike deep at the root and make it compulsory that all stock in the United

Kingdom at a certain age shall be inoculated under the careful supervision of paid officials. I would give all credit to the Act of 1878 for the great good it has done in checking the spread of this disease. By its rigorous enforcement in the counties it has had a very beneficial effect, but is it necessary to keep in motion this cumbrous piece of machinery? Is it necessary to tax the already overburdened ratepayers to carry it into operation, when we have at hand such a cheap and simple process as inoculation? Inoculation will give confidence to the breeders and feeders of cattle to multiply their stock, and it will open wide our ports and swell our markets with abundance of cheap food to such an extent that even the poorest may have a plentiful supply."

The *Chairman* said he agreed with Mr. Reid that the system of inoculation would never be the success it deserved to be till it reached the ears of our legislators, and through them all stock be inoculated when calves, and all imported stock be inoculated (if not meant for slaughter) at the port of debarkation. He had no doubt there were steps in the disease when inoculation was not only preventive but curative. As to the insufficiency of the period of quarantine provided by the Act of 1878, he agreed with Mr. Reid, and questioned whether four, or even six, months would be sufficient.

In the course of the further discussion, *Professor Walley* said there was one thing that puzzled him in regard to the practice of inoculation. In London and the neighbourhood inoculation had been practised very largely, yet for one man in favour of it you would get another against it; and pleuro-pneumonia had not been stamped out of those countries, such as Holland, where inoculation was compulsory.

The *Chairman*, in reply, said he could only judge from the results of his own practice; but he offered to go to London at his own expense and arrest any outbreak of pleuro-pneumonia, provided a Commission was appointed to watch the result. The operation and treatment in London were not the same as that practised here. In regard to the arrestive effects of inoculation there could be no question, and the profession should be glad that the slur had been removed from it of not being able to do anything for this disease.

Mr. Storey, East-Linton, said that in the district for which he was inspector pleuro-pneumonia had almost died out, though inoculation had not been generally practised. He attributed that result to the manner in which the Act of 1878 had been enforced.

Again replying to Professor Walley, the *Chairman* said he believed the effects of inoculation would last throughout the animal's lifetime.

The general feeling of the meeting at the close of the discussion seemed to be that both the Act of 1878 and inoculation were required, and that, with both properly applied in conjunction, the disease could be easily overcome.

Professor Walley exhibited some interesting pathological specimens and narrated their history. He also read the following papers:

SPECIAL FORMS OF INTESTINAL TORSION AND DIS- PLACEMENT OF THE COLON IN THE HORSE, PARTICULARLY IN REFERENCE TO THE CAUSE OF DEATH AND THE USE OF THE TROCAR AND CANULA IN TYMPANY.

In introducing this subject to your notice I do not intend to make any lengthened remarks, but merely to supplement those I made in the

paper which I read at the meeting of the Liverpool Association in 1875. Since that time I have been enabled to diagnose with almost unerring accuracy three very important forms of twist and displacement. These are—1st. Torsion or displacement of the double colon with venous (partial vascular) strangulation. 2nd. Torsion of the double colon with arterio-venous (complete vascular) strangulation. 3rd. Displacement of the double colon-sigmoid flexure—in an obliquely forward direction from left to right, and across the small intestines.

Before describing these lesions in detail I will briefly refer to the causes which are usually in operation to produce them. They are more frequently seen in lorry or heavy than in light horses, more probably owing to the fact that the bowels of the former are more voluminous and more largely filled with food and water. The sigmoid flexure is pre-eminently liable to displacement on account of its comparatively free position, and from the fact of its usually being the receptacle of a large quantity of semi fluid matter. The actual displacement may be, and in my opinion is usually, produced by either of the following causes:—(1) By rolling about in the agonies of colic, or when turned out to grass; by pitching violently forward on to the nose in attempting to lift a load or from losing the feet in slippery weather, or by falling over an embankment. (2) By the powerful contraction of the muscular walls in spasm of the intestines. (3) By the action of gas (tympany) on the interior of the gut when it is comparatively empty; the power of imprisoned gas to displace a knuckle of intestine is well and often seen in making autopsies of horses whose intestines have become inflated with gas from decomposition of their contents after death.

In any of the lesions I have particularised the attendant symptoms may not be developed or observed for several hours, and in the third form for many hours after the occurrence of the accident which has given rise to them; their advent is undoubtedly most rapid in the second form. I am satisfied that in many cases a horse receives displacement or partial torsion of the colon when at work, and does not evince any decided symptoms—not even colic—for hours, in fact not until the congestion of the intestine becomes pronounced, and in the third form not until the small intestine and stomach become tympanitic.

In the first form of colic displacement the symptoms, then, may appear suddenly; in many cases, however, they are preceded by prolonged enteralgia, and symptoms of enteritis. In due course the previously full, strong, and irritable pulse becomes softer, the injected mucous membranes gradually paler in colour, the body bedewed with moisture, the countenance anxious, and the breathing somewhat hurried and laboured, the head is turned wistfully to the flank and side, the enteric pains are more subdued, but still persist and most markedly of all; if attempts are made to distend the jugular vein for the purpose of bleeding it will be found impossible to render it tense, difficult to drive the flam into it, and when opened only a comparatively small quantity of blood can be abstracted, and that is usually of a dark colour. This condition of the jugular becomes more pronounced as dissolution approaches. The temperature does not, as a rule, exceed 104° F., and on rectal exploration the resilient tumour, which I have before described as characteristic of intestinal torsion or displacement, may be felt, as may also the tense and twisted longitudinal bands of the gut. The posterior bowels are usually emptied rapidly, the fæces being pultaceous and passed in small quantities. After death there is usually sero-sanguineous effusion into the peritoneal cavity.

The occluded intestine is enormously increased in bulk, in weight, and in thickness; the peritoneum is sometimes intensely congested and ecchymosed—in this case it is always associated with peritoneal effusion—at other times nearly normal. On making an incision through the intestine a quantity of fœtid gas escapes. The egesta is usually mixed with large quantities of blood serum and, and not infrequently coloured with hæmatin; owing to solution and transudation of the hæmato-globulin from pressure, at other times it is mixed with coagula of blood or large quantities of fluid blood, the mucous membrane is thickened, softened, dry, corrugated, and roughened on its free surface, of a dirty brown colour, and frequently fissured; the sub-mucous and sub-serous tissue is infiltrated with serum to the extent of three-quarters to one and a half inches thick, while its small vessels are engorged to their utmost; the arteries empty, the veins fully distended with semi-coagulated blood, which oftentimes resembles damson pulp, and is composed mainly of coloured corpuscles, many of which are ruptured and their walls shrivelled. The lymphatics on the exterior of the intestines are charged with lymph.

The line of demarcation between the involved and free portions of the gut is very pronounced, as it is also in the second form.

In the second form of colic displacement the accompanying symptoms are developed suddenly and with great violence; the pulse is bounding, almost incompressible; the jugular and superficial veins, full of blood, can be readily distended, and when opened the blood flows with great force, and is bright in colour: venesection only reduces the pulse to a slight degree, and gives but little relief from pain; the mucous membranes are intensely injected, perspiration profuse, tremors marked, eye prominent, countenance desperate, and the pain is persistent and agonising, manifested in a great variety of ways, and cannot be relieved. Death usually takes place in from four to six or eight hours, while in the first form life may be prolonged for sixteen or even eighteen hours.

On *post-mortem* examination the intestine is found to be black, mortified, and friable, the veins and arteries plugged. A very fetid odour is evolved from the strangulated intestine and its contents.

In the third form of intestinal displacement the symptoms are manifested gradually, and, usually, secondarily, *i. e.* after an animal has suffered from enteralgia, from any cause, for a number of hours. Only two well-marked cases of this form have come under my notice. The pain is subdued; in fact the animal may stand quietly for a long time, or may evince occasional accessions of pain; the pulse is quick and weak; the mucous membranes injected; the breathing laboured, occasionally spasmodic; the temperature about 103° F., with moderate perspiration, and an anxious expression of countenance; there is continued œsophageal regurgitation of fluid and gas, great distension of œsophagus being observed with each eructation, leading to the supposition that the animal is suffering from impaction of that tube. On auscultation the metallic gurgling sound peculiar to the movement of fluid and gas in a hollow viscus is heard along the whole course of the œsophagus, in the thoracic region, and over the stomach in the epigastrium. The animal may vomit a large quantity of fluid before death. In any case there will be attempts at vomiting.

In none of these forms have I referred particularly to such concomitant symptoms as yawning, sighing, neighing, gnashing of the teeth, clenching of the jaws, curling of the upper lip, backing against prominent objects, or pressing the breast against the manger, or the head against the wall, straining and groaning when the hand is introduced

into the rectum, knuckling of the hind fetlocks, and cold sweats. As dissolution approaches, gradual muscular exhaustion, tympany, or jerking breathing. These symptoms may accompany other forms of intestinal obstruction, and many of them may be absent.

After death there may be an entire absence of congestion or inflammation of the colon; the small intestine usually presents punctiform hæmorrhage, and the gastro-mucous membrane is more or less inflamed, this being the result of irritation of the retained ingesta and the medicines. The stomach, intestines, and the cardiac end of the œsophagus are distended with gas and fluid.

The differential signs of these three forms of colic displacement, then, are plain. In the first we sometimes have a prior period of enteralgia, which may be, and usually is, attributed to indigestion or enteritis, accompanied by a full strong pulse and injected mucous membranes, and the jugulars can be readily distended. This is followed by gradual emptying of the jugulars, failure of the pulse, lowering of the temperature, diminution in the colour of the membranes, the pallor of the latter never being so extreme as in ordinary cases of internal hæmorrhage. Confirmatory signs are sometimes obtained by rectal exploration. In the second we have the intense and uninterrupted agony, the injected condition of the mucous membranes, the fullness and strength of the pulse the fulness of the jugulars, and the rapidity with which death takes place. It may be asserted that these symptoms are those of phlegmonous enteritis. To some extent they are, but the dry, furred, and livid condition of the buccal membrane, so characteristic of enteritis, is absent, and the temperature is not so high; moreover, death rarely takes place from enteritis in so short a time as six or eight hours, many of the so-called cases of inflammation of the bowels being nothing more than one of these two first forms of colic torsion.

The difference between the train of symptoms here alluded to is easily explained. In those cases in which there is only venous obstruction the blood is constantly being pressed into the veins through the arteries, and, as it cannot escape by its natural channels, the former become distended with blood to their utmost limits, and, the pressure continuing, the fluid parts of the blood are finally forced through the walls of the capillaries into the intestinal cavity, into the peritoneum and the submucous and subserous tissues, the denser portions of the blood and the red corpuscles accumulating in the obstructed veins. In many instances the walls of the capillaries give way, and extravasations result.

The culmination of all this is death by internal hæmorrhage, the intestine acting the part of a sponge, through which the life of the animal is gradually drained and squeezed into the peritoneal and intestinal cavities and the connective tissue of the bowel; hence the diminution in the colour of the injected membranes, the failure of the pulse, and the progressive emptying of the jugulars.

Where there is arterio-venous obstruction mortification takes place rapidly, and death is produced by nervous exhaustion. The amount of blood lost to the circulation is so slight as not to interfere with the pulse or the jugular veins.

The rationale of the symptoms in the third form of development is as follows:—There is none or but slight strangulation of the large vessels of the displaced colon, consequently circulation is not obstructed, as in the first form, nor is pain produced. The compression exerted by the colon on the small intestines (duodenum or jejunum) forms an effectual barrier to the further passage of ingesta, consequently all the fluids in-

roduced manually, or by the animal voluntarily drinking water, into the stomach or intestines are imprisoned. Eventually gas is evolved, the stomach and intestine are distended to the utmost; the gas, by its own diffusive properties, passes into the œsophagus, anti-peristalsis takes place, and forces the fluid also into the œsophagus, thus producing the regurgitation and borborygmial sounds already alluded to. Death in these cases is produced purely by exhaustion and by interference with the normal functions of organs.

The cause of death in these three special forms of colic torsion and displacement is that which I have assigned; but, while saying this, I must call your attention to a recent translation, by Mr. Steele, of some remarks made by M. Bouley, to the effect that death is produced by putrid infection, *i. e.* absorption of the products of putrefaction from the alimentary canal. I cannot agree with the statement, as I think it is highly impossible that such absorption could take place with the intestinal parietes in the condition I have described, and the symptoms accord with the conditions I have pointed out.

Now, as to the use of the trocar and canula in tympany, I have adopted this method of giving relief to horses for the past seven years, sometimes affording immediate and permanent relief at the first introduction of the canula, at others failing to obtain the slightest benefit, though introducing the canula a dozen times in different parts of the abdomen—wherever, in fact, it has appeared to me that the greatest amount of gas was imprisoned. The conclusion is natural that relief will be most certainly and rapidly afforded in those cases in which the tympany is circumscribed and due to decomposition of food, in which condition the gas passes freely through the canula without blocking it up, whereas in fermentation, with the ingesta, fluids, and gas forming a seething mass, the canula is completely blocked, and the quantity of gas liberated is comparatively small.

In my early experiments in this operation I found that very frequently I entirely failed to relieve my patient, and discovered that, in some cases at least, my canula was too short. For the past five years I have employed a large curved trocar and canula, of about a quarter inch in diameter and seven inches long, the advantages of which are—1st, that owing to the curve the open extremity does not pass into the ingesta and become blocked, but, by remaining in the upper part of the intestinal tube, it allows the free exit of the gas; 2nd, it is not so liable to become displaced by the peristalsis of the intestine and the movements of the animal.

In introducing the trocar and canula when the animal is on his back or side it must be borne in mind that the relative positions of the ingesta and the gas are altered, the former gravitating to the lower part of the intestinal cavity, the latter ascending to its upper; due allowance must also be made for the thick layer of abdominal fat, which is always present in fat animals.

The removal of the hair and the making of a small incision in the skin facilitate the introduction of the trocar, but in making this incision an unlooked-for accident may happen, *viz.* the infliction of a large wound by the sudden contraction of the muscles at the moment the lancet is introduced; hence the necessity of gathering up a small fold of skin, where practicable, between the finger and thumb, before making the incision.

The canula may, if it is thought advisable, be left *in situ* for several hours with impunity; but if any sign of displacement is observed it should be withdrawn, as its free extremity would produce considerable

irritation of the peritoneum; it may be utilised for the introduction of antiseptic fluids directly into the intestine, and in cases of twist or displacement, where the tympanic intestine can only be felt through the wall of the rectum there should be no hesitation in the introduction of the canula through the gut. The use of the canula in the circumscribed tympany accompanying torsion and displacement is a point to which I wish particularly to direct your attention.

I am satisfied that some cases of partial twist and displacement are cured by the spontaneous reduction of the involved knuckle of the intestine, and that not unfrequently the gradual removal of the imprisoned gas, by absorption or otherwise, is an important factor in this reduction; in any case, the longer the gas is allowed to remain in the intestine the greater is the probability of congestion and mortification resulting, and the more certainly will the involved bowel become paralysed subsequently; further than this, the removal of the pressure exerted by the gas must give some relief from pain, which, be it remembered, is often the actual cause of death in these cases; and the character of the evolved gas will enable us to decide as to the existence or non-existence of mortification.

If necessary, the tapping should be repeated again and again and in different situations. I have never yet seen any ill result follow the punctures, and if any hesitation is felt the small trocar and canula attached to the hypodermic syringe may be first introduced.

ARTIFICIAL EYES IN THE HORSE.

In the October number of the *Veterinary Journal* for 1875 an article on this subject by the late Mr. Field, with some remarks by the Editor, will be found.

An opportunity occurring, I last year determined upon trying the utility or otherwise of the horn discs, and through the kindness of Mr. Dollar, junr., I obtained one of these, manufactured by Messrs. Arnold. The subject of the test was a very valuable lorry horse, whose eyeball had been burst some months previously in a most unaccountable manner while his driver was away at his dinner. All signs of inflammation in the injured eye had subsided, but the owner did not like the unsightly appearance it gave to the animal's face.

The introduction of the disc was accomplished in the manner described by Mr. Field with the greatest ease, and as observed by that gentleman the difference in the appearance of the animal was striking; the disc, however, was too small, and during the night it became displaced; in a few days subsequently I obtained a larger one, and after it had been allowed to remain *in situ* for four or five days catarrhal inflammation of the conjunctiva was induced, necessitating removal, and the application of measures for the reduction of the inflammation. The same result followed the re-introduction of the disc, but the experiment incidentally illustrated the value of the disc in the case of entropium. For some time prior to the use of the disc, I had noticed that entropium of the upper lid was gradually taking place, and was contemplating an operation for its prevention, but I found after the disc had been used for a short time that the tendency to inversion was reduced, and by its repeated use for a few days at a time I have now succeeded in doing away entirely not only with the actual eversion, but also of any tendency to it.

While referring to this case I may direct your attention to the great benefit to be derived from the administration of iodide of potassium and calomel (alba) in lenticular cataract. In this particular horse the un-

injured eye became the seat of this lesion about sixteen months after the receipt of the primary injury, and, what was worse, the cataract developed insidiously, so that when I first saw it its formation was complete; nevertheless, by persistence in the use of the above mentioned agents, and the occasional application of Ung. Hydrarg. Iodidi, to the side of the face, I had the pleasure of seeing the cataract dispersed, a small speck alone remaining, and vision being perfect.

A short discussion afterwards ensued, and it was agreed that "torsion of the colon," and intestinal diseases in general, should form the subject for discussion at the next meeting

JOHN McFADYEN, *Secretary*.

MIDLAND COUNTIES VETERINARY MEDICAL ASSOCIATION.

MEETING IN NOTTINGHAM.

THE Thirty-eighth Meeting of the Midland Counties Veterinary Medical Association was held at the George Hotel, Nottingham, on Wednesday Afternoon, September 17th. Professor Pritchard, of the Royal Veterinary College, London, President of the Association, occupied the chair. There were also present Messrs. Parker, Birmingham; H. R. Perrins, Worcester; F. J. Pyatt, Nottingham; Over, Rugby; Blakeway, Stourbridge; Taylor, jun., Nottingham; Capt. Russell, Grantham; W. Carless, Stafford; G. Carless, Worcester; J. Cox, Stoke-on-Trent; W. Carless, Lincoln; Hodgkinson, Hanley; Bowles, Abergavenny; G. H. Pyatt, Nottingham; Goodall, Melton-Mowbray; Heap, Melton-Mowbray; L. C. Tipper, Birmingham; Martin, Chesterfield; Weston, Eastwood; Smith, Tunstall; Noar, Ashbourne; E. Hodgkinson, Uttoxeter; Cox, Nottingham; J. Taylor, Loughborough; W. A. Taylor, Manchester; D. Aitken, Loughborough; C. J. Reynolds, Mansfield; Rossell, Sandiacre, &c. Letters of apology were read from Professors Williams and M'Call, Messrs. Greaves, Manchester; Steele, London; Berry, Northampton; W. C. Barling, Newnham; Cartwright, Wolverhampton; J. Carless, Stafford; W. F. Chattell, Bromley, Kent; J. W. Hill, Wolverhampton; E. Cresswell, Bromsgrove; C. U. Page, Banbury; W. Stanley, Leamington; J. B. Wolstenholme, Manchester; T. G. Ball, London; and H. Olver, Tamworth.

Professor Pritchard commenced the proceedings by giving a very interesting description of the new method of "firing." Since the circular had been sent out he found that the method was not so novel as he had anticipated. On the subject of the utility of firing he would not enter, but if useful he considered the apparatus he was about to introduce most desirable, and that it should be generally employed. It consisted of a spirit-lamp connected by india-rubber tubing with two india-rubber balls, by which a stream of air was sent through the flame, greatly increasing its power. A hollow iron, with a hollow wire through its neck, was heated in the flame, and the current of air was then connected with a bottle containing benzoline, the iron being also connected, the spray was evaporated; the spirit being passed up the iron produced combustion and kept up the heat. The benzoline should be of the commonest quality, and the bottle not nearly full, whilst the apparatus should be kept in a dry place, and care taken that the bottle

was not turned upside down, as the benzoline might thus escape and corrode the metal and more especially the wire in the hollow tubing. The apparatus was small, and exceedingly portable. The work by this could be performed more readily and more artistically. The wounds would heal better, and less blemish would be observable. He had, in fact, seen cases of pyro-punctnotomy which had scarcely left any blemish.

Captain Russell said he had used the apparatus for about five months, and he could endorse the remarks of the President. He had placed the spirit-lamp, together with the remainder of the apparatus, around his waist, thus having his hands much more at liberty. He had modified the apparatus for firing for different purposes, and the whole cost was only £7 10s.

Mr. Blakeway understood the apparatus to be named Thermo-cautery. He had seen it employed by medical men in his neighbourhood, and considered that using such an apparatus was calculated to raise veterinary surgeons in the estimation of their clients. He thought one person should generate the spray whilst another used the firing instrument.

THE TREATMENT OF SANDCRACK.

Professor Pritchard next addressed those assembled on the subject of mechanical support of the hoof, or what was generally considered necessary in the treatment of "sandcrack." He wished especially to speak of the principle enunciated by Mr. South, of London, which not only dealt with the bringing the hoof into a healthy state, but also with a plan for supporting the hoof. The majority of practitioners had plans for this, but until the views of Mr. South were promulgated there had been various usages; for instance, clinching was very generally used to prevent sandcrack, to hold the margins of the crack in apposition with each other. Mr. South adopted a plan which would clearly show that this was not absolutely necessary. He held that if the margins of the crack were to be kept in a perfect state of rest, it was not absolutely necessary that they should be in apposition to each other. Let him remind them that if a horse's hoof was cracked, the animal suffered therefrom every time it moved its foot, for the movement caused the crack to deepen. Mr. South said, and rightly too, that that movement would only cause an opening so far, and no farther; and with that impression he had the idea, that if they could insert something in the shape of a wedge which would hold the margins of the crack, and so far, as the movement of the animal would bring about a spreading, it would have a more beneficial effect than any other mode of treatment; and it also occurred to him that by this the horse might actually be kept at work. If that was so, it was a very great advantage. They had had hitherto to treat sandcrack in different ways, and they knew under the systems hitherto adopted that horses required considerable rest even in treating them with plasters (hear, hear). There were certain complaints wherein, under a certain *regime* of treatment, a month's rest was necessary; but Mr. South said that in his treatment the horse might go to work the next morning. Not only did he say this, but he (*Professor Pritchard*) had seen it done. Still Mr. South did not hold out that his plan would succeed in every case. There were some instances where, instead of proceeding direct down the hoof, the crack took a zig-zag course, in which, perhaps, the proposed treatment would not succeed so well; but Mr. South asserted that in the majority of cases his plan of treatment was certain to be successful. The speaker having explained in detail the manner in which Mr. South proposed to prevent suffering

in horses from sandcrack, which was illustrated by models produced, showing that it was the simple insertion of a wooden wedge, the exact counterpart in shape of the fissure made by cutting away a part of the hoof where the crack was, and said this piece of wood was sufficiently wide to widen the original fissure, and when cut off level with the hoof and smoothed off, the horse could readily work. If they had followed him, they would understand that the fissure had been forced as wide apart as possible, whatever strain there might be upon the foot; and it being impossible to move this, the margins were in a much more quiescent condition, a greater state of rest than could be produced by any other principle previously tried.

THE USE OF THE ECRASEUR.

Mr. George Carless (Worcester) stated that since the President had introduced the ecraseur to him (one of which was on the table) he had obtained one, and he was very much pleased with it and liked it better than actual cautery. Captain Russell had suggested that he should sleep with it for a few days to get used to it (laughter). He did not know whether the gallant captain had done so, but he could certainly use it much better than himself.

Capt. B. H. Russell said he had taken great interest in Farmer Miles and his principles. There were two or three things one required to know about this instrument before it could be used with confidence, and he would do his best to inform them upon the matter. Farmer Miles had now left England, and therefore they could not have his experience, but he would show them one or two things worthy of notice. The great point was to get the chain secure upon the cord, for if they got the cord straight through the animal would not bleed, but if the cord was slanting it would bleed a gallon, or perhaps more. Farmer Miles invariably in castrating an old horse twists the testicles three times round and then screws them off. He said he liked to see the horse bleed, but if you do not want it to bleed, you place the cord in the usual way, and then screw it up until you find you have got the testicles tight. Then with a sharp nip you break through the blood-vessels.

Mr. Taylor (Manchester) said he could not rise without thanking them for the invitation to attend that meeting, and according his small meed of praise to the President for bringing so many instruments there. The mode of treatment for sandcrack, as being practised in a large town, as well as the President's remarks, he might say, were very valuable to him, and not only to him but every practitioner (hear, hear). They had long felt that there was a want of some such treatment as this, and the explanation given by the Professor he hoped would enable them to bring about some such desideratum (hear, hear). With regard to thermo-cautery, he had heard of it but had not seen it actually practised. Still he thought it must be one of value particularly to country practitioners, or any with a large practice in towns. It was certainly an improvement upon the old system when they had to go to the kitchen fire to heat their irons, and he thought it a step in the right direction. The effect really was the same whether the horse was fired with a poker or any other heated iron. With regard to the "ecraseur" he might say that he had found it successful in the removal of large external tumours, and especially in one on the elbow of a horse in which the animal could scarcely have suffered a second. This was very important as he considered, but he had not used the instrument for castration purposes; still he felt sure that it would be adopted by most practitioners.

EXTRAORDINARY TUMOUR IN A HORSE.

Mr. Blakeway said by the permission of the President he had to lay before them the history of a case which would be perhaps of some interest although perhaps some of those present might have seen similar cases. As it, however, had features of interest to himself, he would mention the case together with the *post-mortem* appearances. The case in point occurred in a carriage-gelding belonging to a client of his, which he had known for years, and which had never shown symptoms of any disease. It was a very good horse with high courage, and did its work remarkably well. The first time anything of consequence which happened was when he was called in to attend an enlargement of the elbow, caused by a bruise, which he subsequently lanced on Oct. 15th, 1878, operating upon it as he determined in the ordinary way. This course of treatment was apparently satisfactory, and he (*Mr. Blakeway*) did not see the horse for some time, as he was put to work. A short time afterwards he saw that the horse had bruised the elbow again and he thought it necessary to cauterise it. This was done on the 1st of April, 1879. Great swelling began to take place in the neighbourhood of the chest and on the fore quarters. He might tell them the horse always had a peculiar appearance upon the fore quarters, the superficial veins being much and peculiarly enlarged. This swelling went on to a very great extent in spite of physic given and fomentations used, gradually increasing, and then he arrived at the conclusion that the animal had got an effusion into its chest. He did not think it necessary or advisable to puncture the chest as the external swelling was so considerable. It being a case of considerable interest he requested his employer to let some other veterinary surgeon see the animal, and *Mr. Parker*, of Birmingham, came over to consult with him. *Mr. Parker* was also of opinion that there was great effusion around the chest, and that it was not advisable to puncture, but he asked if there had been any symptoms of heart disease. They both came to the conclusion that there were small hopes of saving the patient's life, but administered tonics and allowed liberal diet. The animal, however, died, and a *post-mortem* examination disclosed that the abdominal veins were healthy. There was great effusion upon either side of the chest, and an immense tumour upon the pericardium of the left side, which was evidently pushing the heart to the right side. This tumour was found to be 18 lbs. in weight. There were tumours in other parts of the chest, and one in a lobe of the lung. This tumour was, as far as microscopical examination could discern, what might be considered as interior disintegration. The horse for 18 years had shown not the least symptom of disease, nor that it had any affection of the pericardium, and yet this tumour weighing 18 lbs. had been found. The owner thought his (*Mr. Blakeway's*) operation on the elbow had something to do with the case, and therefore he asked that *Mr. Parker* should come in.

Mr. Parker (Birmingham) said when he saw the horse the superficial veins of the fore quarters were very large. It was a nervous, awkward horse to approach. There could be no doubt about the effusion around the chest, nor that something was the matter with the pericardium. He had never heard of a similar case and such an immense mass of tumour he had never dealt with.

Professor Pritchard remarked that he was of opinion that this was a very interesting case which *Mr. Blakeway* had brought before the meeting. He thought that the tumour had been forming some considerable time before the operation upon the elbow, and he did not consider that there was any relation between the two conditions. The effusion upon

the chest would lead him to suspect that there was interference with the heart's action, and the *post-mortem* would cause them to see why there should be this effusion and distention of the superficial blood-vessels. He considered the effusion was due to the interference with the passage of the blood through the venous trunks. He should be inclined to think that it was encephaloid cancer and not tubercle (hear, hear).

Election of New Members.

Professor Pritchard having announced that the next business was the election of new members, said it was always a pleasurable thing to be able to add to their numbers, and he was glad to say they would be able to do so that afternoon.

The following new members were then separately proposed, seconded, and carried unanimously:—Capt. B. H. Russell (Grantham); Mr. F. G. Heap (Melton Mowbray); Mr. F. J. Pyatt (Nottingham); Mr. David Aitken (Loughborough); Mr. L. C. Tipper (Birmingham); and Mr. W. R. Marriott (Cotgrave).

An Amusing Letter.

The *Secretary* (Mr. George Carless) stated that he had issued a great many invitations, and amongst others one was sent to Mr. John P. Berry, Northampton, who had returned the following reply:—

“CORN EXCHANGE, NORTHAMPTON.

September 12th, 1879.

“DEAR SIR,—I shall *not* be able to accept your invitation to Nottingham. The subjects named for the day's business remind me of the ‘bill of fare’ at our meetings of the Veterinary Medical Society of London, when Professor Pritchard was my fellow student. How is it that we are about 50 years behind in medicine? our tender mercies must still be written ‘cruel.’

Yours truly,

JOHN P. BERRY.”

—(laughter).

[The *Secretary* announced that he had sent a reply regretting the absence of Mr. Berry, and assuring him that they would be pleased to see him at any future meeting (hear, hear).

The Next Meeting.

Mr. Over suggested that the next meeting be held at Rugby.

Professor Pritchard thought that would be a very good town, it being central and easy of access.

Mr. G. Carless seconded the suggestion made by Mr. Over.

Mr. Coe proposed that it be held at Stoke-upon-Trent, which was, however, afterwards withdrawn, and Rugby was fixed upon.

This concluded the business, when the members joined each other at the festive board, a capital spread being provided.

OBITUARY.

WE regret having to record the death of Mr. Wm. Baxter Taylor, M.R.C.V.S., who died Sept. 20th, at Anston, Rotherham, aged 51 years. His diploma bears date May 19th, 1853.

Also of Mr. Wm. Hamley, M.R.C.V.S., Penzance, who died at Bodmin, Sept. 9th. His diploma bears date April 28th, 1868.



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Communications and Cases.

SYNOPSIS OF CONTINENTAL VETERINARY
JOURNALS.

By JOHN HENRY STEEL, M.R.C.V.S., F.Z.S., Corresponding
Member of the Italian Veterinary Academy.

(Continued from p. 786.)

Summary.—*Journal de Médecine Vétérinaire et de Zootechnie*, October, 1879.—“Veterinary Appointments and Honours.” From *Il Zootechnico*.—“Veterinary Congress of Italy,” by M. Cornevin. *Recueil de Médecine Vétérinaire*, 30th October, 1879.—“Inauguration of the Statue of Claude Bourgelat, at Alfort College;” 15th October.—“Congress of Naturalists, Physicians, and Veterinarians of Germany.”

The Congress of Italian veterinary professors and practitioners took place at Bologna, and lasted from the 7th to the 10th September. About 200 veterinary surgeons from different parts of Italy attended and co-operated. Professor Lanzillotti-Buonsante, President of the Organising Committee, opened the sitting. On his right was the illustrious Commander G. B. Ercolani, representing the Minister of Public Instruction; on his left Professor Cocconi, Member of the High Council of Health, representing the Minister of the Interior. The Prefect of Bologna, Commander Rizzoli, representing the Academy, and M. G. Brugnoli, represent-

ing the University and the Faculty of Medicine, also attended among others. The Prefect and the Assessor of the Corporation addressed words of welcome to the members of the Congress. Then M. Ercolani, who was most enthusiastically received, spoke in the name of the Minister of Public Instruction, and gave assurance that the Government takes notice of the desires of veterinary surgeons, for it recognises their value in relation to agriculture and national industry. After him M. Cocconi addressed the meeting, and dealt especially with the two following points—protection against empiricism and the institution of veterinary communal appointments. With regard to the first matter, the Government in its proposed sanitary code has suggested penalties for empirical practice of veterinary surgery; as for the second, the charges which weigh down communes will long be an obstacle to realisation of the wishes of the Government. It would be necessary to originate a broad conscription of veterinarians. The speaker especially insisted on the necessity of combating charlatanism and ignorance by the diffusion of science. Professor Lanzillotti then gave an account of the origin of the Congress, after which the following officers were elected:

President, Lanzillotti of Milan. *Vice-Presidents*, Generali, Director of the School of Modena; Delprato, Director of the School of Parma; Paladino, Professor at the School of Naples; Griffini, representative of the Royal and National Veterinary Society of Italy. *Secretaries*, Tampellini, Professor at the Modena School; Generoso and Romano, private practitioners; Paolucci, Professor at Ancona. *Vice-Secretaries*, Azzalli and Capitoni. After a few words from the President, acknowledging the honour done to him, the discussion on the *Conditions of Admission into the Veterinary Schools* commenced. In turn, Professor Paladino and Messrs. Cristin, Buccalossi, Ortolani, and Amicucci spoke on the matter. The Congress having heard the contradictory opinions of these speakers, carried the opinion "That the licence of the Lyceum be demanded for admission into Italian veterinary schools." On the proposition of M. Paladino, the Congress unanimously voted, "That the Chair of Anatomy and Physiology should be divided." At the commencement of the afternoon sitting, the president communicated many telegrams of sympathy sent by members prevented from being present, notably from Professor Bassi, of Turin. Then M. Griffini, of Milan, read an elaborate paper on the "Repression of Empiricism." A very animated discussion, in which very many members of the teaching body

and of practitioners took part, followed this communication. It was terminated by a vote that the suggestions of the sanitary code relating to the practice of veterinary medicine should be supported and improved. Professor Guzzoni of Milan, then read an important report on the necessity of formulating a uniform guide for veterinary meat inspectors of Italy. A confused discussion resulted, many motions were brought forward, and at last the Congress decided to name from among its members a commission of ten, some professors, some practitioners, with instructions to present as soon as possible to the Minister of the Interior a scheme of sanitary regulation of markets, slaughter-houses, and butchers' shops.

The next sitting was opened by the reading of a paper, by M. Calo, "On the Necessity of rendering obligatory the Appointment of Commissioned Communal Veterinary Surgeons." The conclusions of this work were adopted by the Congress, and were formulated in the following vote:—That in large towns inspection of meat should be carried out solely by specially appointed veterinarians, and that in minor localities this inspection should be performed by the commissioned communal veterinarians. After an explanation by Professor Lanzillotti, the Congress voted that a post of Inspector General of Veterinary Schools should be originated, the said inspector to represent the veterinary teaching body at the high Council of Public Instruction, and to act as a means of communication between the school and the minister. At the sitting on the 9th September, the law concerning unsoundness was brought forward for discussion. Since the unification of the Italian Kingdom, no law applying to the whole country has been promulgated, each province having retained its own system of legislation. To reform this state of things and to furnish bases for uniform legislation in this matter, the Congress brought forward this question. M. Delprato, Director of the Parma School, had prepared a report, which served as a basis for discussion. The following is the list of faults and diseases which the Congress considers as "unsoundness:"—For horses, asses, and mules:—Glanders and farcy, 14 days' warranty; "broken wind," 14 days; immobilité, 21 days; nasal gleet, 40 days; "roaring," 9 days; vice, 9 days; restiveness, 9 days; intermittent lamenesses, 15 days. For male and female horned cattle:—Cough resulting from chronic pulmonary disorder, 8 days; pleuro-pneumonia exudativa, 42 days; vice (indicated by attack with the horns), 8 days; restiveness (indicated by impossibility of harnessing the animal),

8 days ; prolapsus uteri vel vaginæ, 8 days ; vertigo due to cœnurus cerebialis, 15 days ; intermittent lameness, 10 days ; epilepsy, 40 days. For pigs :—Measles 14 days ; trichinosis 14 days. For wool-bearing animals :—Sheep-pox, 9 days ; rot (*cachexie ictérique-vermineuse*), 14 days ; vertigo due to cœnurus cerebialis, 15 days.

At the morning sitting, September 10th, the first proceeding consisted in the nomination of a commission for preparation of the 'Uniform Guide for Veterinary Meat Inspectors of Italy.' The following were named members of that commission: MM. Guzzoni, of the Milan School; Delprato, of the Parma School; Zoccoli, of the Naples School; Cristin, of the Naples School; Mattozzi, of Macerta; and Romaro, Calissone, Poli, Ortolani, Azzali, and Romano. M. Guzzoni to be President. Professor Generali then examined the much-debated question, whether it is preferable that the veterinary schools become united to the universities or university institutions of the towns in which they are established, or remain independent establishments? By a majority the Congress carried that the veterinary schools should be attached to universities or university institutions, and that they should thus acquire the position and advantages of higher or secondary schools, according to the status of the university or institute to which they are attached. M. Guzzoni then reported upon the number and the nature of the professorial chairs in the veterinary schools. The conclusions of this paper were adopted, and the Congress, in addition to its previous vote, carried that the instructions in chemistry, botany, and geology should be given AT THE UNIVERSITY to veterinary pupils as to all other students; that the number of VETERINARY PROFESSORS should be eight, of assistants four, and of vice-assistants two. The arrangement of the chairs should be as follows:

- A. Descriptive and Topographical Anatomy—Histology—Dissections—Practical Micrography.
- B. Physiology and Physiological Chemistry.
- c. General Pathology and Pathological Anatomy.
- D. Medical Pathology and Medical Chemistry.
- E. Pathology and Surgical Clinic—Operative Surgery.
- F. The Outdoor Clinic—Bovine, Ovine, and Porcine Pathology—Obstetrics.
- G. Experimental Pharmacology—Jurisprudence.
- H. Hygiène—Zootechny—Zoognosy.

At the afternoon meeting M. Griffini gave an account of a visit paid to the Prefect and the Syndicate, and then read a paper on a scheme for formation of a society of mutual aid

among veterinary surgeons. The discussion on this subject which ensued resulted in a request that the members of the Veterinary Committee of Venetia and Marches, who have started a work of this kind, be asked to aid by their experience a committee formed to reinvestigate the matter. The programme next led to a discussion on the organisation of a sanitary veterinary service in the kingdom. Many practitioners—MM. Romano, Ferrari, Paulucci, Azzali, Palombi, Ortolani—advocated rigid inspection, especially at the ports and frontiers. M. Generali drew attention to the fact that the question of frontier inspection is involved with that of treaties of commerce with neighbouring countries. The vote for organisation of a sanitary service was unanimous. The Congress then heard M. Cocconi's report of the number of Government veterinary schools, and accepted the opinion of the reporter, who proposed that they be reduced to four. It likewise adopted another of his proposals, that the private schools be kept on the same footing as those under Government, or if unable to accomplish this, be suppressed. M. Bassi, of Turin, ought next to have read his paper on "Tariff of Medicinal Agents," but the learned professor had been prevented from attending, and had not sent his *mémoire*. But the matter was passed over as of minor importance, since a new scheme of pharmacopœia renders the sale of medicaments free. Before pronouncing the termination of the reunion the President thanked the members, especially the army veterinarians, for their zealous aid. Commander Ercolani then, as well in the name of the minister he represented as on his own behalf, applauded the useful work done by the Congress. Then MM. Guzzoni and Griffini proposed that other meetings should follow the present, and the meeting decided that the next Congress be held at Naples in 1881.—*Il Zootechnico* (translated into French by M. Cornevin.)

By a ministerial decree of 10th September, 1879, M. GOUBAUX, Director of the Alfort School, was appointed to the Chair of Sanitary Police and Commercial Legislation at the said school, vacated by the retiring of M. Reynal. The Chair of Anatomy and External Conformation, vacated by M. Goubaux, is given to M. BARRIERE, Professor of Natural History at the Toulouse School. "Dr. ROLL, Councillor to the Austrian Court, who, by his publications has deserved well of the veterinary profession, not only in own country, but throughout Europe, has just sent in his resignation. While director of studies at the Veterinary Institute of Vienna he also for many years performed the duties of Pro-

fessor at the University of Vienna, and has been consulted by the Austrian civil administration in every difficult question. Venerated by his pupils, among whom we have the advantage of reckoning ourselves, Roll, by his teachings and his writings, has made for himself a reputation extending far beyond the borders of his country. His 'Manual of Special Pathology and Therapeutics,' translated into different languages, is adopted by the veterinary schools of different countries. His clinical lessons were always marked with that decision of practice which his pupils and graduates will not soon forget. After teaching for thirty years at the Veterinary Institute of Vienna, M. Roll is about to leave that establishment, which owes to him, in great part, its high repute. The Austrian Government, which, in recognition of his services rendered some little time ago, appointed him Councillor of the Court and Member of the Superior Council of Hygiène, has just awarded to him, besides, the decoration of Chevalier of the Order of the Iron Crown (third class). Drs. Ambrecht and Bruchmüller, also Professors at the Vienna Institute, are named Councillors of the Austrian Government, in recognition of their services during a long academic career" (Dr. Wehenkel). M. Melon, army veterinary surgeon, has been appointed Chevalier of the Order of Leopold, while seventeen members of the veterinary profession have received civic decorations from the hands of the King of the Belgians. The third session of the International Congress of Medical Sciences was held at Amsterdam, from 7th to 14th September, 1879. M. GILLE, Professor at the School of Veterinary Medicine, was one of the delegates of the Belgian Government to this Association. Called to assist in the Section of Pharmacology, he was named Honorary President of this section, and has had to perform the duties of reporter for the project of establishing an international pharmacopœia, as at the preceding session.

Congress of Naturalists, Physicians and Veterinarians of Germany.—On 17th September was opened at Baden the fifty-second Congress of Naturalists and Physicians of Germany. The position of Baden on the banks of the Rhine and at the entry of one of the most beautiful valleys of the Black Forest and the splendour of that miniature capital brought crowds of German *savants* to the work and pleasures offered by the Congress. The visitors were numerous and the programmes always full. When Oken, of Leipzig, in 1822, collected around him some *savants* and founded this Congress, he expressed the idea formulated in Article 2 of its rules: "The principal aim of the Congress is

to bring about personal acquaintance between German naturalists and physicians." This spirit reigned at Baden. Mathematicians, physicians, chemists, geologists, zoologists, botanists, doctors, pharmacutists, and veterinarians, met not only at the three general sittings, but also at the meetings of the twenty-three sections, at which special communications were produced and discussed. Naturally these sections, in which personal acquaintances could most easily spring up, remained correspondingly grouped for pleasures and excursions, and it was during these outings, from which gaiety was far from being excluded, that exchange of ideas flowed most readily, and amusement was combined with instruction. The Congress lasted until the 24th September, and this year, for the first time, veterinarians have been invited to take part in it and form a section. For the first time they have found their place at this scientific Congress—a fact which in itself deserves record. M. HERING, the celebrated Professor, accepted the invitation, and his great age only prevented him from presiding over the Section of which he had been elected President by acclamation, and obliged him to hand over the chair to Dr. Roth Lydlin, Veterinarian of the Court at Carlsruhe. M. Braun, of Baden, was entrusted with the introduction of the Section. Both gentlemen most ably performed their duties. When I tell you that Roloff, Director of the Berlin Veterinary School; Professors Leisering and Dundorf, of Dresden; Frank, Director of the Munich Veterinary School; Professors Fricker, Ruff, Schmitt, and Roekle, of Stuttgart; Annocker, of Dusseldorf; Putz, of Halle; Zipperlin, of Hohenheim; Nievesheiser, of Berne; and Zundel, of Strasbourg, came to Baden, I do so to show that, even if all of the aristocracy of the profession was not present at the Congress, it was well represented. Numerous private practitioners supplemented these. The Veterinary Society of the Grand Duchy of Baden, by making one of its meetings coincide with the Congress and fixing Baden as the place of meeting, brought a stout phalanx to assist in the work and pleasure of the Congress. After the formation of the Veterinary Section M. Roth Lydlin, President, welcomed all members in an oration of high interest, in which he dwelt upon the great importance of the fact that now for the first time veterinary surgeons have taken an official position in the Scientific Congress of Germany. The voluminous correspondence which he placed on the table showed that this had not been brought about without trouble, and to M. Lydlin is due the honour of having brought the negotia-

tions to a successful conclusion. Then M. Putz, of Halle, in an excellent paper, pointed out the different phases through which veterinary science had passed in attaining its place among the other branches of natural science. The aim of this dissertation was to decide the question, "What place should it hold in relation to the other branches?" Professor Annocker, of Dusseldorf, completed M. Putz's work by indicating that which is still necessary to place veterinary on entire equality with other natural sciences, the conversion of veterinary schools into Academies or Faculties. After these general questions, which were quite in place at the first sitting, the Section passed to the special subjects of the programme.

1. Pathogeny and Therapeutical Treatment of Rabies, by M. Kopp, of Strasbourg.

2. Formation of Concretions (*Ægagropiles*, Bezoars, and Calculi (spherical and encysted) in the Intestines of the Horse, by M. Lydlin, of Carlsruhe.

3. On Thermometry as a means of Diagnosis of *Pleuropneumonia zymotica*, by the same.

4. On Removal of the Parotid by means of an Injection of Ammonia and Tincture of Aloes (1 to 3) by Steno's Duct, in cases of Salivary Fistula, by M. Kopp, of Strasbourg.

5. On Feeding Horses with Decorticated Oats. The advantage of removal of the husk in relation to transport, by M. Braun, of Baden.

6. Veterinary Works and Statistical Records presented to the Section by the Minister of the Interior of Baden. These works are certainly the most complete of any country's records, not only as extending through the longest time, but also as being most exact and practical. They prove the excellency of veterinary organisation in the Grand Duchy of Baden, for they are the result of the work of all the local veterinarians, summarised by the principal veterinarian of the Grand Duchy. Harvests, Numberings, Breeds, Increases, Contagious and Sporadic Diseases, are the titles of some of the chapters, comprising statistics of thorough exactness in reference to all species of animals, the results being graphically illustrated by coloured charts. The Veterinary Section addressed to the Minister of the Interior a vote of thanks, carried unanimously, and recommended this great and perfect work to the rulers of all countries as a model of veterinary organisation and statistical method. M. Lydlin having been good enough to undertake to give the Section the necessary explanations—

7. At the Section of Surgery veterinarians assisted in the presentation of a new Thermo-cautery, by Dr. Paquelin, of

Paris. One of the exhibitors of surgical instruments (a small exhibition was appended to the Congress) kindly supplied the instrument. Advantage was taken of the occurrence in Baden of a case of chronic tarsal arthritis in a colt to experiment by means of the thermo-cautery with fine penetrating points. The operation showed the great advantages of this method, which allows the introduction into the synovial dilatation of a cautery which can be constantly preserved at a red heat in spite of the cooling influences of the synovia. The conditions of the case four days after operation authorise us to prognosticate complete recovery. There were also presented to the Section—

8. A *Nasoscope* by M. Lydlin, to enable us to look for glanderous ulcers in the deepest part of the nasal chambers; a new form of probe (*sonde-harpon*) for meat inspectors, by M. Kopp; a metallic diffuser for veterinary use in operating after Lister's method; adaptation of the human laryngoscope for examination of glandered horses; different maximum thermometers for veterinary use.

9. The Section consulted with M. Bollinger, Professor of Pathological Anatomy at the Munich School, concerning transmission of tuberculosis to animals by consumption of milk from tuberculous cows. A sow had eight young ones; four were fed with milk from a cow supposed to be healthy, four with milk from a tuberculous cow. After ten weeks all the animals were killed. The sow, the cow supposed to be healthy, and the four pigs fed on the milk of that cow were found to be healthy, unaffected with tuberculosis, whilst the cow supposed to be affected with tuberculosis was found to be so, and so also were the four pigs which had been fed on her milk.

10. Finally the Conference, at a general sitting, heard Dr. Skalweit, of Hanover, discuss the question, "How far is the opposition against adulteration of foods to be carried?"

These communications gave rise to discussions often prolonged beyond the official sittings, and thus generally to highly interesting conversation. During the eight days of the Congress the members of the veterinary profession worked in all amity and brotherly concord. Thus the reunion proved most satisfactory, and I am convinced more than one member regretted the decision of the Congress that Dantzic be the seat of 1880 meeting, for that town, being too far north, will prevent many from being present. It is for the veterinarians of North Germany to form during the coming year a veterinary section for the fifty-third Congress, and before separating the Congress named a

commission, charged with the duty of ensuring the success of that second veterinary meeting (J. Kopp, V.S., Strasbourg).

Inauguration of the Statue of CLAUDE BOURGELAT at Alfort Veterinary College.—On the 30th of October last the Statue of Claude Bourgelat was inaugurated at the Alfort School with great ceremony. The academies and learned societies of Paris, the veterinary societies of France, a great number of journals, political, literary, and scientific, were represented on this occasion. Almost all the European veterinary schools connected themselves with this celebration by letters of congratulation and support. The schools of Berne, Brussels, Munich, and Roumania took part in the proceedings by means of a deputation. M. Chauveau, Director of the Lyons school, by his presence gave testimony of the fraternity which now binds together the several schools, which have resulted directly from the labours of the founder. The School of Toulouse sent an address, in which the same sentiments of fraternity were fully and warmly expressed. Three orations were given :

One by *M. H. Bouley*, who presided at the ceremony in consequence of the enforced absence of the Minister of Agriculture.

The second by *M. Baron*, Professor of Zootechny at Alfort School.

The third by *M. Thierry*, of *Tonnerre*, in the name of the veterinary practitioners.

M. Ernest Pisa, a young veterinarian of the Department of Seine-et-Oise, terminated the proceedings by a happy epilogue, which was much applauded.

Thus, Germany, Italy, France, are exhibiting professional unity in its highest form, and are giving the veterinary profession a recognised position in the world of science, as well as drawing to it attention of governments and the public. When will the turn for an English Congress come? Our neighbours have shown us the way, shall we not make some attempt to follow in the path they have trodden so well and with such success? We can turn to another side of the picture. In Russia blind nihilism on the one hand, and terrified power on the other, are undermining the foundations of society. All orders of men, all professions are affected. Some time ago the veterinary school of Kharkoff was closed in consequence of the political tendencies of its students, and we now hear that Dorpat University is to lose its German character, and be remodeled on Russian principles! Its veterinary school, we presume, will be involved in the

change. We are not sorry to see that our brothers in Russia are forward in the cause of liberty.

NOTES MADE DURING VISITS TO REMOUNT DEPOT, AT SAHARUNPORE, NORTH-WEST PROVINCES, INDIA.

By CHARLES STEEL, Veterinary Surgeon, 16th Lancers, on Special Service during the Afghan Expedition.

History of Studs and Depôts.—As the Reserved Remount Depots of the present day were preceded by Government Breeding Studs, some points in the history of the latter will give an appropriate introduction to my subject, especially as I propose to glance at the whole system of remounting the army in India. The first breeding stud was established about 1798 at Poosah, in Lower Bengal, by Moorcroft, the well-known veterinary surgeon, who was sent out by the East India Company for that purpose, with a view to improving the breed of horses required for the army, the horses of the country being considered weak and deficient in size, although from some districts, as from the Deccan and Katyawa, good horses were obtainable for sporting or riding purposes. An extensive tract of land, amounting to about 3000 acres, was secured, a number of mares and a few stallions were imported from England, and to these were added some mares from the Deccan and other parts of India, together with some mares, said to be Arab, which were presented. Thoroughbred and three-quarter-bred mares were at first put to thoroughbred horses, in order to *start* a good stock; Moorcroft being thoroughly aware that whatever modifications might be subsequently desirable, without the basis of good blood the improvement could not be obtained. One drawback to an immediate improvement was very soon discovered, viz. that of degeneration of foreign breeds as the result of climate, it was therefore found that country-bred mares must be utilised. The wisdom of this cross, which was made at Moorcroft's suggestion, was not long in being manifested, for troops were in due time supplied with a much more suitable animal, and, consequently, the stud system was then declared a success. Encouraged by this success, the East India Company extended the system to the North-West Provinces, and Hissar, a place to the west of Delhi, was selected for a site; this place was situated in a purely sandy district, dry, and at that time unprovided with irrigation. Here a superior class of horse was also bred and sup-

plied to all India, one of the produce, called "Pretender," being so eminent as to beat all English horses on the Indian turf, and realise from three to four thousand pounds, a great contrast to the relative powers of Indian and English horses in the present day, the latter having now to concede as much as two stone or more to the former, but *then*, first-rate English horses were attainable at more reasonable prices than now; it would clearly be rather too great a venture to send a Blair Athol, Gladiateur, &c., to India for army stud purposes. Owing to these efforts, there was a general improvement in quality and size of horses, and Government selected those considered the best, keeping them with a view to still further improvement, the remainder of the produce being sold and in degree disseminating desirable qualities throughout the country.

About the time of the establishment of the Hissar stud, a breeding establishment was started at Padnell in Yorkshire, from which the Indian stud was supplied *mainly* with stallions.

The following enumeration of some of the stock used at this period, and up to 1826, will give an idea of the material employed in the Indian studs:—

Adonis by Teddy the Grinder, out of Precipitate's dam; Bone Ash by Trumpeter, out of Jilt by Buzzard; Capsicum by Pot-8-o's, out of Sting by Herod; Benedict by Remembrancer, out of Beatrice by Sir Peter; Celasco by Clavileno, out of a Pioneer mare; Tristram Shandy by Woful, out of a Sir Peter mare. The Hissar stud lasted until 1839, when it was broken up in consequence of the stock being considered to have too much blood. Moorcroft's guiding hand was surely wanted here, but he had long since perished in Cashmere, and it is to be feared that less educated supervision had succeeded; for, if it were true that too little bone was apparent in the produce, why sacrifice this acknowledged key-stone of *breeding* so successfully established? Crosses securing the desired *substance* were surely attainable. About this time Padnell was also given up, and Willesden Paddocks established. Poosah breeding establishment succeeded, which was subsequently transferred to the depots of Buxar and Karruntadhee, places on the banks of the Ganges, below Benares; at one time these had as many as 6000 mares served by Government stallions, and the depots continued in spite of the inquiry of three commissions, until 1876, when all breeding studs were abolished. Studs at Saharunpore and Hapur were started in 1844, in consequence of the climate of the North-West Provinces being considered more favorable, and were conducted partly under the Assamee system, by which mares were left in the hands of zemindars, or owners of land. The "Home Stud," so called after the defunct Willesden, was established at Kirnaul, in

the Punjaub, in 1864, and there the Assamee system was abolished, Government mares being kept at the stud. During its existence, of about thirteen years, two Commissions were assembled to report upon its progress. Difficult and varied must have been their investigations, for all kinds of vast and expensive experiments were tried in the way of crosses. Thoroughbred horses served thoroughbred mares; ditto were put to half-bred country mares; Arab stallions were crossed with English. Waler and country mares, even Arab, were tried with Arab mares and thoroughbred horses with English cart mares. The produce indicated the cross of the English thoroughbred or three-quarter-bred stallion with stud-bred mares (of English and Arab blood dropped in the country) as being productive of the most useful horses. Arabs were noticed to degenerate in size; Waler mares were remarkable for being, as a rule, barren for the first four years of their residence in the country, not more than four per cent. proving prolific, a circumstance that might be taken as rather a nice gauge as to the time required for their thorough acclimatization. Ultimately, however, their produce with English horses showed quality and points; the turf Arabs will also prove them to have possessed speed and endurance. Thoroughbred horses with cart mares produced nondescripts; the pure thoroughbreds were fancy articles, and for the turf rather than useful as horses for the army. The cross with half-bred country mares varied much in its results, but the average was not satisfactory.

The "Home Stud" started with about twenty mares, and at last reached five hundred.

One smaller depot has not been mentioned, viz. that of Ghazepore; and amongst private studs of any notoriety are the Vincent of Barh in Bengal, consisting of about twenty-five to thirty mares; the Probyn, at Probynabad, near Moultan; General Parrott, also started a stud in place of the "Home" one, which is now flourishing, and numbers about one hundred head of stock. With regard to the number of mares in existence in the North-West Districts, during the time that the Saharunpore and Hapur Studs were working on the Assamee system, there were never under three or four thousand, and the number of stallions imported from England, up to the time of the abolition of breeding studs in 1876, amounted to hundreds, of which only a very few now remain.

Management of Studs.—Moorcroft might be considered the sole director of the stud system in his time; but, subsequently, a Military Staff was established, consisting of a Superintendent (Colonel); two Deputy-Superintendents (Lieut.-Colonels or Majors); Depot Officers (under Superintendents with subordinate officers); a Veterinary Surgeon to each establishment.

The following is a list of the Stud Department in 1870 :—

Superintendent of Studs.

Major Couper, Staff corps, Saharunpore.

Deputy-Superintendents of Studs.

Lieut.-Col. Sir C. W. D'Oyly, Staff corps, Hapur.

Major W. C. McDougal, Staff corps, Central Provinces.

First Class Assistants.

Col. A. A. Mac Donnell, Bengal Infantry, Saharunpore.

Col. A. C. Plowden, Staff corps, Buxar.

Second Class Assistants.

Lieut.-Col. Parrott, Staff corps, Kurnaul.

Lieut.-Col. E. S. Jackson, Bengal Infantry, Hapur.

Sub-Assistants.

Lieut.-Col. W. B. Irwin, Staff corps, Poosah.

Lieut.-Col. Trench, Staff corps, Kurnaul.

Major Smith, Staff corps, Ghazeepore.

Doing-Duty Officers.

Sir J. Farquhar, late 2nd European Light Cavalry, Poosah.

Capt. Rochfort, late 4th European Light Cavalry, Kurruntadhee.

Lieut. L. J. Jamieson, 7th Hussars, Ghazeepore (probation).

Capt. Capel, late 5th European Light Cavalry, Kurruntadhee (probation).

Veterinary Surgeons.

Garrad, Principal Veterinary Surgeon, Kurruntadhee.

Woods, Saharunpore.

Kettlewell, Kurnaul.

Skoulding, Poosah.

Bath, Hapur.

Oliphant, Hapur (officiating).

There were conductors, who had been sergeants in regiments, to overlook the grooming and feeding.

A head salootree, and four or five assistant salootrees to each establishment.

Nailbunds (farriers), six to each depot, syces, &c.

The superintendent's duty was general direction. The deputy-superintendent's duty was to look to the breeding under the Assamee and zemindar systems, the Assamee being a contract between Government and breeder, by which the former was bound to take, and the latter to sell produce of mares left with them and covered by Government stallions, the price being from 70 to 120 rupees, when from six to twelve months old. Under the Zemindar plan the sale was optional on both sides, the only stipulation being "first refusal" of produce. First-class assistants attended to management of horses at the depots or studs. Second class acted under *these*; sub-assistants helped them;

the doing-duty officers (not a very definite title) acted under all the former, and had certain stables told off to them, as in troops of cavalry. The veterinary surgeon's duty was simply confined to attending cases in hospital. Here was a large and important establishment, and that the charge was considered a responsible one, will be assumed from the rank of the officers engaged. The high pay of officers of such standing proves also that Government was not deterred by the expense of remuneration from doing its best to make the department efficient. Doubtless, the superintendent must have had his hands full with such an army to command. The deputy-superintendents must have been weary of their travels over extensive districts to see after the welfare of the matrons, and the treatment of the rising generation. First, second, and third-class assistants, it will be observed had separate stations, so it must not be presumed that they were superfluous; and the "doing-duty officer" was clearly required; thus really an analysis shows that the staff was not too strong. Whether all officers were adapted for their posts might admit, perhaps, of a question. One would be rather suspicious of the intimate acquaintance of those from infantry regiments with equine matters, not that it is impossible to select horsemen from infantry, but there does not appear to have been any qualifying test. One of the superintendent's duties on visiting the districts, was to inspect mares which were submitted to him for approval, when, if passed, they were branded on the shoulder. As has been above stated, Government was obliged to take the produce of these under the Asamee system. On the Zemindar plan an extra ten rupees was always given for the foals of mares with brand. On inquiry into the management of studs and depots, I much regretted to find that the duty of the veterinary surgeon was so scrupulously restricted to the treatment of his patients in hospital. It is well known in the army, and appreciated in all large horse establishments, that veterinary supervision keeps the hospital comparatively empty, and that there are innumerable opportunities of making suggestions, hygienic and otherwise, that certainly add to well-being and efficiency; it ought surely to be remembered that the veterinary officer *has* been subjected to *his* qualifying test.

Finance.—At all the Bengal studs a very nominal rent was paid for the land; at Hapur it is also hired; at Saharunpore it is the property of Government; at the "Home Stud" it was also advantageously hired, with right of cutting timber. So far economy appears to have been secured. The system of accounts, however, seems puzzling to the uninitiated; for years the accounts have been kept at Calcutta for *all* studs, and depots included,

and none for individual establishments, for which merely a cash-book was kept by their respective commandants. There was one exception, however, viz., that at the India house for stallions. No attempt appears to have been made officially to estimate the cost of each horse. When the various sources of expense, subsequent to purchase, are taken into consideration, no wonder that it has been found difficult to arrive at a true conclusion as to the expense of remounts by the time they join for service. In some instances a youngster is bought at six months, kept till he arrives at three to four years of age, does not then turn out satisfactory, and is rejected. There are travelling expenses, outlay of men attending purchase of stock, expenses of farm. Allowances had to be made to Assamni for breeding, keep of stallions, for cultivation of grain crop, &c., and some of these I understand remain to this day unadjusted. The startling number of rejections during the stud system point to an enormous loss, amounting as they did to at least fifty per cent. of the produce purchased and bred. The present system, that of purchasing horses from four to seven years of age, ought to be an improvement, as the calculation of expense is evidently more simple, and the risk of unfitness by misadventure much less; but there are still two great drawbacks, viz. general unfitness and unsoundness. The latter could certainly be prevented by the more perfect recognition of veterinary aid. The former would indicate that my scepticism as to the skill of purchasers is in some instances confirmed, and that, as a rule, such misfits can be avoided I affirm, from personal inspection of the animals bought by one particular agent, which exhibited that consistency of judgment *essential* in selection of horses.

Taking the establishment of studs in India during a period of seventy years as a commercial enterprise, it must be, and is, admitted to have resulted in absolute loss; but the question arises, Has not the country been enriched by the general improvement in breed of horses? The answer is, yes; but, unfortunately, the structure raised during this long time is tottering, if not destroyed, by the absorption of parent stock, since the apparently ill-advised total abolition of studs. I understand that stallions and mares have become almost totally extinct, in consequence of neglect on the part of the natives into whose hands they have fallen.

Another system has now, however, been started, which must secure the best wishes of all connected with horse interests in India—it is that of stallions provided by Government to serve mares at a very small price, no restrictions whatever—not even that of first refusal, as in Zemindar system—being placed upon the owners of the mares, Government competing on fair terms

in the market, where it is hoped there will be a general improvement. Mr. Hallen, Staff Veterinary Surgeon, superintends this system for all India; Mr. Batt, V.S., acts under him for the North-Western Provinces and Rajpootana, his charge comprising a district larger than France; Mr. Merryck, V.S., for the Punjaub, represents a tract of country as large as Germany. These officers, for the insufficient remuneration of 200 rupees per mensem, in addition to their pay as army veterinary surgeons, are supposed to keep an account of all the brood mares in their districts, the stock produced, and what becomes of it. To carry this supervision out thoroughly with so small a staff in such extensive districts, is obviously impossible; however, it may be a move in the right direction, and has yet to be proved. The price given for remounts ought to be a remunerative one to the breeder, viz. 550 rupees for four-year-olds and upwards. When we consider the expenses connected with this effort of Government to improve the breed of horses in the country, it is obvious that a very large return ought to result in the way of increased efficiency of our cavalry and artillery.

One officer of thirty years *Indian* experience is entrusted to purchase stallions in *England* in place of Mr. Phillips, who formerly supplied them. There is no fixed price, and, on looking through sales of yearlings, it may be observed that some are purchased by this officer, to be kept until of sufficient age for covering. The stallions are sent out by troop ships and consequently the expense of transit is curtailed. The number imported in India annually is from twenty to thirty. These stallions, when not on their rounds, are kept at Hapur, and when in breeding districts, they cost about eight rupees per horse per month. There are hundreds of register keepers to pay, farriers, salootrees, &c., and at least £2000 per annum is given in prizes for mares and geldings; the object of offering a premium for the latter being to encourage castration, as there is a very obstinate prejudice against emasculation of their horses amongst the natives. It is to be hoped, as before said, that this free-trade system of horse-breeding may meet with success; if so, it may at some future time prove an example for imitation at home, where it is not impossible that some encouragement from Government may be required to keep up the supply of good horses in our markets, which, it is to be feared, is gradually failing us. The supervision is in excellent hands with Mr. Hallen, and that he is not idle or wanting in enthusiasm is well known. It is the working expense and want of support from native breeders that are the chief obstacles apparent; but if the sympathy of the latter can be secured, we may, perhaps, allow a large margin of expenditure to be placed against the national

benefit, and so be content for a time, although no direct economy is immediately obvious in the military supplies. That some mode of diminishing the cost of trooper production was necessary will be proved by estimating the expense of matured horses during the stud arrangement, and by the present depot system. The amount under the stud system has been variously estimated at from rupees 850 to rupees 2800; but the best authority appears to place it at about rupees 1750, the sum being made up of the price of stallions, amount of purchase-money for produce, feeding, pay of establishment, rent, and repair of buildings. Is it less than this in the present day? Every Waler costs rupees 100 for transit from Calcutta, add to this the purchase-money rupees 550, the cost of Calcutta depot, where they are collected, that of the reserved depots of Hapur and Saharunpore, deaths, accidents, rejections for unsoundness, keep of horses at depots (sometimes for years) at a rate of rupees 25 per horse per month, and the ultimate expenses of transit of selected horses to regiments.

Description of Premises at Studs or Depots.—We will take Saharunpore as the best and most extensive establishment. There are stables with paddocks, and a farm is attached. The stables consist of six ranges of arched sheds about 200 feet long, and twenty-five feet high, composed of mud brick with tile roofs. A wall about three feet high runs down the centre, surmounted by open brickwork, to a sufficient height for guarding against injuries. There are no partitions or stalls, and the mangers consists of earthen pans supported by platforms composed of mud. The horses stand head to head, and there is a hole under each manger for the circulation of air. To the rear of the horses is sufficient space for the attendants to walk in safety, and without the walls is a verandah, also arched. The flooring is of blueish clay, which forms a material when dry partially impervious, but it is occasionally found necessary to have this removed and replaced. The strictest cleanliness is enforced, and in consequence the perfection of purity appears to have been secured. Ventilation receives, of course, great consideration in the construction of these stables, and to secure the full benefit of welcome breezes; in hot weather the *situation* of the building is of great importance; but the architect appears to have overlooked this during the construction of five of them, only one securing the best aspect by being built with its gable ends north and south. The reason of this situation being preferable is, that during hot weather the prevailing breezes are east and west, and it is obvious that in a building 200 feet long the benefit of these breezes must be curtailed when the sides are not exposed to those quarters. The roofs are raised at the eaves, the arches

are always open, and altogether the effect produced is satisfactory. Wells and drinking troughs are placed at the end of each stable. Dung is immediately conveyed to pits on the farm situated at some distance. There is, unfortunately, no provision for urine, but the syces are constantly on the watch with cans to catch that fluid when being voided, which, although contributing to cleanliness, is a system not without its objections. The hospital stable is also a lengthened shed built of kiln bricks. It has a semi-arched roof of solid masonry with ventilating shafts, consists entirely of loose boxes with open brickwork walls. There are verandahs as in the ordinary stables, and "ghamps" are provided lying in a slanting direction against its porches. These "ghamps" consist of double bundles between which straw is placed, and into the spaces of which bands are woven, cord being added for additional security; they act as guards to prevent the ingress of cold winds, and the degree of exclusion can be regulated by the position in which they are placed. There appears to be a difference of opinion as to their further utility, but Mr. Kettlewell, the veterinary surgeon in charge, assures me that they also prevent the too rapid ingress of *hot* air, the difference in temperature between the outside and inside of the stable when they are used being from 30° to 40° in hot months, and that in stables where they are not used the temperature in the after part of the day is hotter inside than outside. It must certainly be said in favour of Mr. Kettlewell's theory that these means exactly correspond with those adopted for keeping bungalows cool in India, and it is a pity that prejudice should prevent such an easily ascertained point being at once settled and acted upon. If the temperature can thus be reduced for the comfort and benefit of fifty horses in hospital, why not let the 1000 horses in the ordinary stables share the luxury, and so prevent in all probability many of them from becoming candidates for admission to hospital?

The paddocks consist of enclosures of about fifty acres in extent; they are not irrigated, although the Jumna canal supplies all the neighbourhood with water; they are fenced with wooden rails which, I am given to understand, are a great source of expense in consequence of the frequent repair necessary as the result of the ravages of white ants. In one part is a plan of division apparently much preferable to the rails, viz. mud banks similar to those so common in Ireland, surmounted by the prickly aloe plant. These are very effectual in preventing the escape of fresh horses from their pasture, and, although requiring frequent repair, especially during the rains, must be much more economical. The grass in these paddocks is fairly good, being principally "dup" (*Cynodon dactylon*) and Suwarra, or Serr-

walla (*Andropogon*). I could not help thinking that the style of stable which has been described might be adopted with advantage in England, but am informed that they are considered insufficient protection in cold weather; they appear to me sweet, well ventilated, clean, and all that could be desired. The paddocks are considered over stocked; they are well supplied with very fine trees.

The farm is about 1500 acres in extent, and is cultivated for supply of food for the horses; chiefly oats are grown, but there is also a millet called impey, of which I have a specimen; carrots and endive are here, too, produced. Two hundred bullocks are kept for the cultivation of this farm; the grass upon it is inferior to that in the paddocks, and I was sorry to observe it much impregnated with sedge; the land appeared to me to be of the fen kind, and altogether did not indicate skilful agriculture.

Method of feeding, exercise, &c.—The materials employed for feeding are split gram, ground barley, bran, oats, grass called “dup,” “impey” (a millet), sutto, and linseed. The coarse sedge and reed grasses are used for litter. The ordinary feed for healthy horses in cold weather is five seers (ten pounds) of gram and bran in the proportion of two seers of gram, two of barley, and one of bran. Younger horses have gram two seers, one and a half of barley, and half a seer of bran; the gram in both instances is soaked. Walers on first arrival are supposed to be favoured so as to make them presentable, and for this purpose extra sutto and linseed are given. In hospital, *as a rule*, no barley is given, and but two seers of gram and one of bran. Oats without straw are sometimes used as a change of food, but, of course, the diet is left to the discretion of the veterinary surgeon, who can have any article he requires on requisition. In addition to the above-mentioned allowance of gram, &c., dup grass is given, the cost of which is a rupee for six maunds in cold weather, and for eight maunds during the rains; four to six pounds of oats in straw, and impey (only a rain crop) as green chaff containing nutritious seeds and saccharine matter. It will thus be seen that the feeding is decidedly high for horses entirely unworked, and at times without exercise for days together in consequence of unfavorable weather. The times of feeding are at 9 a.m. and 5 p.m.; the animals are watered three times a day and always before feeding. In hot weather water is given more frequently, access at all times being free to the water troughs. The water at Saharunpore is relished, but there is a little excess of lime in it, to which new comers have to become accustomed, and a source of impurity which has to be strictly guarded against is the habit the syces have of bathing in the troughs when not watched.

The sole *exercise* given the depot horses is that voluntarily taken when turned out in the paddocks, and by the "liberty system" ordered by the stud commission they are supposed to spend the greater portion of the twenty-four hours in freedom; this, however, is practically sadly curtailed, for in hot weather they are only allowed to be out from sunset to sunrise, and, when it rains, they are entirely confined to the stable, where they are tied up by the halter, injuriously keeping them in a constrained position, especially detrimental to the development of the younger animals. It would appear that, in a place so well stocked with beautiful trees as Saharunpore, sufficient shelter would be found, and the hours of confinement to the stable might be beneficially abbreviated.

With the *grooming* I was disappointed: instead of the wisp, and that invigorating process resorted to in India, termed the "mull" (a kind of shampooing performed by the dextrous application of friction by means of the syce's arms). I observed the brush and curry comb to be almost solely used, a duster very occasionally being also applied.

Considering the large number of horses here kept for a considerable time it appeared to me a pity that they should be subjected to no training whatever. Surely some preparation might be made for adapting them to their future duty, thereby preventing the bad habits which too often result from idleness in horses as well as in human beings, ensuring a certain amount of wholesome exercise, which would assist in the development of the young, and rendering them more speedily available for duty on joining the corps to which they are subsequently drafted. Mr. Kettlewell, V.S., obligingly showed me interesting records of the health of horses both during the stud and depot systems. Of course we must be prepared to find the per-centage of deaths much greater during the breeding times in consequence of the danger of parturition, infantile ailments, and castration, but 25 per cent appears rather a large mortality; yet, such was the average. Thanks to stable management and the comparative absence of juveniles, the death rate has been reduced at this reserved remount depot to 3.20 per cent. in the years 1876-77; 2.2 in 1877-78; 2.36 in 1878-79. The diseases most prevalent are skin affections, such as urticaria, prurigo, &c.; indigestion and colic, indicating error in feeding, which might be avoided by permitting veterinary supervision. Pneumonia and catarrh, which, it is well known, ought to be exceptional cases; eczema, strangles; nervous diseases are rare; liver disorders, which may clearly be traced to too high feeding and want of exercise, are frequent, and a most debilitating form of bilious fever sometimes occurs as an epizootic. Much damage is done by immature

breeding, the result of allowing colts and fillies to run together at grass; out of 800 horses at Saharunpore I saw twenty foals at foot, twenty that were weaned, and there were ten more mares to foal; these, in the majority of instances, were useless produce, and the dams were irreparably injured. I must remark, however, that six or seven foals were from Waler mares who had joined *enceinte*.

Wounds amongst so large a number of fresh, highly-fed horses, accustomed to run out together, must of course be expected; hock lameness is very prevalent.

Description of Horses at Saharunpore at present time.

In all 733, viz. :

| | |
|-------------------------------------|--------------------------|
| Walers | 356 |
| Arabs and Persians | 33 |
| Stud breds | 73 (passed for service). |
| Ditto (2 and 3 years old) | 106 (not passed). |
| Country breds | 165 |

733

No. 1 stable I found occupied by Walers only, which had been selected for horse and field artillery, medium cavalry, and chargers. These horses are known by brands, usually of the initial of the breeder, and generally situated on the shoulder; celebrated brands are sometimes forged in order to increase the value of the animals, but such forgeries are easily detected by the initiated, and this is more frequently practised with the E. C. brand than any other. There were seventy-five horses on either side. I had several brought out for my inspection, and found them generally of very suitable size and substance for military purposes, but a great variety of blood was evident, and some were decidedly coarse. Most exhibited freedom of action, with the exception of their hock joints, in which they seemed to be generally deficient, and in many cases there were legitimate spavins causing absolute lameness; exostosis of all kinds appears common in Walers; calf-knees are also a frequent imperfection. Grey horses are absolutely prohibited. It is remarkable that although Walers are often techy when their fore quarters are handled or even approached, they seldom show any disposition to kick when a person is passing behind them. Certain peculiarities were pointed out to me as indicating special families, one breed being particularised by a broken appearance of tail, said to resemble that of the scorpion. "Scorpions" are considered non-enduring horses.

No. 2 stable also contained Walers.

No. 3 stable, stud breds and Walers; also a few boxes at the end for invalids. This is the depot for horses returned from

regiments for a time in order that they may have change of air, rest, and treatment, such as in cases of obstinate unthriftiness, &c., is requisite. Those horses coming from the Kurruntadhee stud are marked on the off side with A. K.; those from the Home stud (Kurnaul) are marked L. on the near side, the letter originating from Lord Lawrence, who established it; some from the Central stud could be picked out by their peculiarly turned-in elbows and hollow backs, imperfections said to be the result of climate and restriction when young. Here were some Walers from Madras, some of a lot of eighty which joined last cold weather, and whose age, I understand, averaged fifteen years; a few from the Buxar stud, marked B., were remarkable for their size and strength; the Hapur horses are marked H. Of all the stud breds the palm must certainly be given to those from the Home stud; they are level horses, all show freedom of action, and exhibit breeding.

No. 4 stable contained stud and country breds. Those country breds that come from Central India are marked on the neck; they are small, but appear sound, and have the credit of possessing good constitutions. It is earnestly to be hoped that Mr. Haller's efforts will result in considerable improvement in country breds from the Punjaub. The present specimens are anything but satisfactory; they are deficient in size, possess sickle hocks and bad fore legs; and in those from every other district, except Central India, there are much the same objections, deficiency and unsoundness of hocks being most conspicuous.

No. 5 stable, country breds.

No. 6 stable, country breds.

Committees assemble twice a week at Saharunpore in the months of October and April, attended by the Circle Veterinary Surgeon (Inspecting V.S.). The Director of Army Remount operations is generally the president. The members consist of an officer of cavalry, one of artillery, and one of hussars. This committee is for the purpose of rejecting those that are unfit, and classing those that pass. The amount of rejections of those sent up from Calcutta and Bombay I was informed was formerly 2 per cent., but now reaches 6 per cent. This is a very serious difference to account for. With regard to the classing I was much struck by the number of hussars and cavalry horses that remain at the depot for a long period in consequence of the supply exceeding the demand, whereas artillery horses are drafted without loss of time. Could not the purchasers be informed as to the class of horse required and the number of each class in stock, so as to prevent the expenditure of twenty-five rupees a month in keeping each of these supernumeraries.

The horses at the depot are solely for the supply of European regiments; native regiments have a "chunda" (or fund), from which they purchase remounts, the average price not to exceed 200 rupees each; every trooper buys his own horse by instalments. When the studs existed the rejections and young stock not purchased by Government furnished an ample supply for the wants of these nineteen regiments, but of late they cannot possibly obtain horses, even at 250 rupees, many regiments having an extra number of dismounted men. The 7th Bengal Cavalry had to go to Calcutta to buy Walers.

The Cape horses were considered the best troopers, but that supply has failed; Persians and Arabs are now rare. In Madras Walers are beginning to predominate, although there are more Persians and Arabs than in Northern India.

In reviewing the success of studs the recent history of the country has to be taken into consideration; it is believed that, although not absolutely paying, they were, as before stated, doing good service indirectly previous to the mutiny, for any number of horses were then obtainable; in that great struggle, however, which shook our rule to the very foundation, the interests of horse-flesh did not escape considerable damage, horses were stolen and destroyed, many starved for want of supplies, breeding was put a stop to. Since that time two famines have contributed to counteract any fresh efforts at increasing the supply, and the influx of Walers has had a depressing effect on the prices of country-breds in the markets, still further, of course, discouraging production. Enough has been mentioned in this paper to prove that the reserved depots are expensively conducted, and it must be evident that, according to the present system, Walers do not pay. With the paucity of country-breds, Persians and Arabs quite as dear as Walers, only about one hundred and fifty stud-breds left of the thousands that were bred, it is evident that considerable difficulty must be experienced in properly mounting our Indian troops, especially in the case of an unusual demand, a circumstance seen to be quite possible when we consider our critical political position at the present time; in the event of this demand money would meet it, we are told, at a very short notice by securing supplies from Australia, but what could be done if that source became unavailable in consequence of our communication with that country being cut off? Mr. Hallen's scheme really would appear the only promising one now in existence for restoring such an internal supply as is required, and it is to be hoped that Government will not be backward in encouraging a movement of such vital importance. It may be that some revision of his plan is necessary, for there are many

who say it does not at present promise success. It is evident that a larger staff must be essential to its well-being, and that, of course, would involve a pecuniary outlay; but if horses could again be produced in the country of sufficient size and quality, we should be independent of the foreign supply now depreciating the value of what little native produce remains, and is being slowly stimulated by the "horse-breeding operations," so that abundant return would result in the restoration of this particular species of Imperial wealth, strength, and independence.

ON PLANTS IN RELATION TO ANIMALS.

By Professor JAMES BUCKMAN, F.G.S., F.L.S., &c.

(Continued from p. 790.)

THE SUB-ORDER—PAPAVERACEÆ

Contains a long list of plants, not only of striking appearance, but many of them are of the highest importance as remedial agents.

Our gardens are ornamented with cultivated forms, which contribute greatly to the ornamentation of the shrubbery and the borders, whilst our fields teem with an abundance of specimens, if not of species, of flaunting poppies.

The sub-order is described by Professor Balfour as follows :

“ PAPAVERACEÆ (*Poppyworts*).

“ A natural order of thalamifloral dicotyledons, belonging to Lindley's ranal alliance of hypogynous Exogens. They consist of herbs or shrubs, usually with milky or coloured juice, having alternate existipulate leaves and long one-flowered peduncles; sepals two, deciduous; petals hypogynous, usually four, cruciate, sometimes a multiple of four, regular; stamens hypogynous, usually indefinite; ovary solitary, the style short or none; stigmas two, or many and radiating; ovules one-celled, anatropal.

“ Fruit either siliquiform with two, or capsular with several, parietal placentas; seeds numerous.

“ The species are chiefly European, but are found scattered over tropical America, Asia, China, New Holland, Cape of Good Hope, &c. The order possesses well-marked narcotic properties. Opium is the concrete milky juice procured from the unripe capsules of *Papaver somniferum* and its varieties. There

are about a score of genera, *Papaver*, *Eschscholtzia*, *Argemone*, *Platystemon*, and *Chelidonium*, and nearly 150 species.”*

For a general history of the genus *Papaver* we quote the following from the pen of Dr. Maxwell Masters :

“PAPAVER.

“A well-known genus typical of the *Papaveraceæ*, consisting of herbs with a milky juice, distributed over Europe and temperate Asia chiefly, though one or two are described as natives of Australia and South Africa. Some of the species, however, are to be met with in many other parts of globe, to which they have been introduced by cultivation or commercial intercourse. The roots are fibrous; the leaves generally lobed or toothed and hairy; the flower stalks axillary, solitary, without bracts, but terminated by a single flower, with two or three concave deciduous sepals, four or six petals, very numerous stamens, and an ovary of four or more carpels conjoined, and capped by a radiating compound stigma.

The fruit is capsular, with parietal placentæ projecting into the interior, opening by pores or short valves beneath the projecting margin of the stigma.

The field poppy, *P. Rhæas*, one of the most brilliant of our wild plants, decorating cornfields, railway banks, and waste places with a perfect blaze of crimson flowers, is distinguished from the other British species by its smooth and globular fruits, and by the bristles which clothe the stem, spreading out almost at right angles with it. The petals are collected for the purpose of making a coloured syrup, which has, at the same time, very slight narcotic properties. The seeds might possibly be used for the oil they contain, and they are by no means destitute of nutritive properties. Double-flowered varieties, of various colours, are not unfrequently grown in gardens as highly ornamental annual plants. *P. dubium*, frequently met with in some parts of the country, is a smaller, more slender plant than *P. Rhæas*, and may be at once distinguished by the capsule, which is twice as long as broad, and by the bristles, which are flattened up against the stem. *P. hybridum* is less branched than the field poppy, which it greatly resembles, but differs in the filaments of the stamens, which are dilated from below upwards, and in the capsule, which, though globular, is covered with stiff bristles. This species is rare in this country. *P. Argemone* is the smallest of the British poppies; its capsule is in shape like that of *P. dubium*, but it has a few stiff hairs or bristles, which are directed upwards.

Several species are cultivated in English gardens for ornamental

* ‘The Treasury of Botany,’ p. 841.

purposes, the most beautiful being *P. orientale* and some varieties of the opium poppy. A variety of the former, with the petals united so as to form a funnel-shaped corolla, has been recently introduced. The opium poppy *P. somniferum* is supposed originally to have been a native of the Levant, but is now widely distributed. The writer has observed it growing on the cliffs between Folkestone and Dover, and also in other places, where it had obviously been introduced. The plant varies much in the colour of its flowers and seeds, and in gardens double varieties are common. In general it forms an erect annual plant, slightly branched, about two feet in height, with the stem and leaves of a glaucous green colour, usually without bristles, but sometimes, especially in wild specimens, with a few straggling hairs. The leaves are oblong in shape, irregularly sinuous at the margin, and clasp the stem by their base. The flowers are usually of a light violet colour, with a purple centre. The opium poppy is cultivated in this country for the sake of its capsules, from which syrup of poppies is prepared, a favourite remedy for children when a sedative is required; but, owing to the varying strength of the preparation, its liability to adulteration with laudanum, &c., and the frequent great susceptibility of children to the influence of opium, in any shape, it should be used only with great caution, and its operation should be carefully watched. A decoction of poppy-heads is often employed as an anodyne fomentation, and with excellent effect; an extract of poppy-heads is also occasionally used in minute doses in place of opium.

“The seeds contain a large quantity of oil, which is extracted as an article of food, and for the use of painters. Olive oil is stated to be adulterated with it—an intermixture of comparatively little consequence, as the oil is destitute of narcotic properties.

“The seeds themselves, in Greece, Poland, and elsewhere, are eaten as articles of food, and have an agreeable, nut-like flavour. It is however, for producing opium that this plant is especially cultivated in India, Persia, Asia Minor, Egypt, &c., and it seems to have been cultivated for this purpose, from the earliest times of which we have any record—at least so far as Greece is concerned. The word opium is derived from the Greek *opos*, juice, as being the especial juice, just as Cinchona bark is called bark. Two varieties of the plant are cultivated for the production of opium, one with violet-coloured or white flowers and black seeds, the other with white seeds and flowers. These two kinds are mentioned by Hippocrates. The latter is the one most generally cultivated in India.

“A very full account of the manufacture, as well as of the properties of opium, is contained in Dr. Pereira's *Materia Medica*

and in the *Pharmaceutical Journal* for 1852. From these sources, as well as from the *Kew Garden Miscellany* (vol. vi), the following remarks have been condensed :

“The preparation of the drug seems to be conducted in much the same way in the various districts whence opium is obtained, but in some much greater care is taken than in others. In India a very large extent of country is devoted to the cultivation of the opium poppy, and at Behar and Benares are Government agencies established for the purpose of regulating the manufacture, ensuring the purity of the drug, &c. When the flowers are in bloom the first step is the removal of the petals, which are used in packing the prepared drug. After a few days the imperfectly ripened capsules are scarified from above downwards by two or three knives tied together, and called ‘nushters.’

“These make a superficial incision, or series of incisions, into the capsule, whereupon a milky juice exudes, which is allowed to harden, and is then removed and collected in earthen pots. The time of day chosen for slicing the capsules is about 3 o’clock in the afternoon, when the heat of the sun causes the speedy formation of a film over the exuded juice ; great attention is also paid to the weather, prevailing winds, dew, &c., as all these causes modify the quantity, quality, or speediness of exudation of the opium.”*

The poppies may be conveniently divided, for our present purpose, into two groups, namely, *exotic* and native or wild species. The first of these will now occupy our more immediate attention.

Mr. Syme, in the new edition of Sowerby’s ‘English Botany,’ describes two forms of exotic poppies as being sometimes met with in England, namely :

PAPAVER SOMNIFERUM.

- | | |
|--|--|
| | Locality. |
| a. “ <i>Papaver hortense</i> , a field and garden plant.” | “A weed in corn-fields and a straggler on waste places and new-turned soil. Local. Abundant in corn-fields at Greenhithe, Darent, Cobham, and several other places in Kent, where it seems as well established as the common red poppies.” |
| β. “ <i>Papaver officinale</i> , opium poppy.” | “Occasionally found in waste places, but has no claim to be considered as even naturalised. There is a specimen in the British Museum from Battersea Meadows.”† |

The first of these would appear to have been attached to gardens, from its more coloured and ornamental flowers, whilst the second is doubtless the true *P. somniferum*, the opium or medicinal poppy.

* ‘Treasury of Botany,’ p. 841-2.

† Vol. i, pp. 83-4.

Many years ago we noticed the latter about Battersea, but as we considered it to be wholly exotic we did not gather it for our collection of native plants.

It has been cultivated in different parts of England, principally for its capsules, which are used extensively for the purposes of making extract and syrup of poppies, whilst the seeds yield a pure bland oil, considered the best for watchmakers.

Our country cousins usually ask the druggist for poppy-heads with the seeds in, under the impression that this is the emollient and soothing part of the plant; but it is not so, as it has no narcotic effect whatever, and the oil which is expressed from the seeds may even be used as an article of diet with impunity.

Dr. Pereira makes the following statement under the head of *P. somniferum* :

“HAB.—Asia and Egypt. Grows apparently wild in some parts of England, but has probably escaped from gardens. Cultivated in Hindostan, Persia, Asia Minor, and Egypt, on account of the opium obtained from it. According to Dr. Royle, var. β *album* is cultivated in the plains of India, and var. α *nigrum* in the Himalayas. In Europe the poppy is cultivated for the capsules, either as medicinal agents or for the oil, (poppy oil), obtained from the seeds, and which is employed in painting. The London market is principally supplied with poppy-heads from the neighbourhood of Mitcham, in Surrey.”*

The garden form of *P. somniferum* makes its appearance annually in our garden at Bradford Abbas, where it is attractive from its varied coloured flowers. In it the capsules are smaller; but we feel quite sure that, with thinning out and other cultivative processes, both the heads of flowers and capsules would become larger, and the former of a lighter colour, when they would be the true *P. somniferum*, or opium poppy.

The latter we have grown in Gloucestershire for medicinal purposes and for experiment, which latter consisted in the growth of opium. To this end, when the plants had been duly thinned, we waited for their flowering. First, then, the calyx would fall off, and next the petals, when the capsules rapidly advanced in size, and when these latter were between one and two inches in diameter we made gashes across or down them with a sharp penknife, choosing, if possible, a bright sunshiny day for the operation. In about twenty-four hours afterwards the exuded white milk, which would become brown and solid, is scraped from the capsule, and forms the extract known as opium. It is collected in the East in much the same manner, but we are informed that the operator is constantly kneading it in his hand, and spitting upon it to make it work *en masse*, and hence the superior viscosity

* ‘Materia Medica,’ vol. ii, part ii, p. 2074.

of the *real Turkey*, which is the article so much loved by the opium eater, who would do well to pause in his career of eating dirt, which he certainly does, in the support of this vice.

The use of opium as a medicine in the human school is well known; it is no less appreciated by the veterinary practitioners. In Pereira's 'Materia Medica' we find as many as seventy-six pages devoted to the description of the opium poppy and its preparations; and in Tuson's 'Veterinary Pharmacopœia' as many as eleven preparations are described.

Time would fail us to enter into a discussion of the qualities of opium and its various preparations; but the following from Tuson will be sufficient to point out the importance of this drug as a remedial agent:

"ACTIONS AND USES (internally).—In excessive doses, narcotic poison; in medicinal doses, stimulant, sedative, narcotic, anodyne, and antispasmodic. Given in gastritis, diarrhœa, dysentery, enteritis, colic, peritonitis, pleurisy, bronchitis, pneumonia, tetanus, rheumatism, and very many other maladies."*

The above list of serious maladies, in some of which opium is the practitioner's sheet-anchor, will serve for the present to point out the importance of the opium poppy.

LUNG PARASITES IN A THREE-YEAR OLD OX.

By A. E. MACGILLIVRAY, V.S., Banff.

A PERUSAL of the Leader in last month's *Veterinarian* brings forcibly to my mind a rather peculiar and very interesting case recently occurring in my practice, which, as it fully bears out the truth of the remarks in the Leader, I intend recording in the *Veterinarian*.

On the 8th of August last a gentleman called on me and produced a large piece of lung-tissue for my examination and opinion, as he had considerable doubt about the state of the beast from which it was taken. Being just about to leave home to meet a party at an appointed hour, I had only time to make a very cursory inspection, which had the following results, namely, lung-tissue not collapsed, but presenting a swollen appearance; found here and there much subpleural and interlobular effusion of yellow serum; found a grumous, mucous discharge from all the visible bronchi; found these bronchi congested; found on

* Tuson's 'Veterinary Pharmacopœia,' p. 180.

cut surface of parenchyma two tubercles about the size of peas; found slight signs of deposit of transparent yellow material on the external surface of pleura: this was all.

In addition the owner gave me the following details about the ox: had purchased him along with several others a few weeks before from a healthy farm; had put the whole into a low-lying field near a river and surrounded by woods; had noticed nothing amiss till about a week before, when the ox began to cough and lose flesh; the cough getting daily worse, and finally becoming so incessant and convulsive that slaughter was resorted to, as he was in good condition.

As the other cattle in the park were all coughing a good deal the owner was quite alarmed, and wished to know if the disease was contagious pleuro-pneumonia.

I have already said that I was in a hurry, so, to get rid of the owner at once, I drew his attention to the *two tubercles*, and said he might remain perfectly satisfied that it was not contagious "pleuro."

I retained the piece of lung-tissue, however, and on returning home in the afternoon proceeded to make a more minute examination; and, on uncovering it, I was astonished to find on the incised surface what seemed to be several very small pieces of *thread* coiled up in various ways. These with an object-glass I found to be alive, and capable of very active motion.

I now got out my microscope and had quite a delightful series of views, under various powers, of several of the living parasites, which were without doubt the small-tailed strongyle or *Strongylus micrurus* of Cobbold. I confess I never expected to find this parasite in the lungs of a three-year old ox, although I have often met it in calves and young stock up to nine months old.

The strongyles were of various sizes, from one to two and a half inches long. They issued from the very smallest as well as the larger bronchi, wherever the knife penetrated. Some of them remained alive over two days; one of them I kept under the microscope for nearly an hour, and during that time it passed at an opening about one-fourth from its caudal extremity three round (slightly flattened) bodies, which I took to be ova—a long string of which were plainly visible inside the body of parasite. These details may appear trifling, but they were very interesting at the time.

The great point in this case, however, was the remarkable resemblance of the morbid lesions in the piece of lung-tissue to those found in the very first stages of contagious pleuro-pneumonia; in fact, I may say the analogy was almost

complete. At the risk of slight reiteration I shall here give a few details showing this analogy; namely, the non-collapse of lung-tissue and consequent swollen appearance; the tolerably large spots of subpleural and interlobular effusion of yellow serum or exudate; the easily perceptible raising or bulging of the pleuro-pulmonalis over these spots of effusion; the parenchymatous hyperæmia accompanying these effusions; the bronchial congestion and its concomitant discharge; and the signs of morbid deposits on the external surface of the pleuro-pulmonalis. All these I saw, and in addition to this the owner said there was an immense amount of fluid within the cavity of the chest, with large yellowish bands of deposit here and there, some of the latter floating about, and at one place the *pleuræ pulmonalis et costalis* were attached to each other (lungs and ribs, as owner said) by one of these bands of yellow deposit.

This description of these morbid appearances could, without any great stretch of the imagination, be well made to stand for a genuine case of *pleuro-pneumonia contagiosa*; and to entirely prove the truth of the editorial remarks in last month's Leader—that mistakes may *and do* happen through confounding the symptoms and *post-mortem* appearances of lung-parasitism with those of contagious pleuro-pneumonia.

The veterinary surgeon, be he inspector or otherwise, cannot be too cautious in giving a final decision in any case where there is the least opening for *a doubt*.

OBSERVATIONS ON THE USE OF THE ECRASEUR.

By GEORGE SOUTH, M.R.C.V.S.

SIRS,—On perusing your journal for the past month I found the ecraseur was highly spoken of at the Nottingham meeting of the Midland Counties' Veterinary Medical Association, for use in castration and the removal of external tumours. If you can afford me the space, perhaps a short relation of my experience may give confidence to other practitioners in using the instrument. A medical friend of mine, a clever lithotomist and operator in removing tumours from the human subject, used the ecraseur some fifteen years ago to take a pendulous tumour from off the tongue of a woman. The result was so satisfactory that I was struck with the thought that the instrument would be a most valuable one

for the castration of horses and the removal of tumours, without loss of blood. I obtained from my friend the very instrument, and believe that it was the first which was used in veterinary practice.

The instrument is of French manufacture, and has been successfully used by me to the present time for castration and the removal of fleshy tumours from the rectum, vagina, penis, mouth, and nostrils. In using it on warty excrescences the chain has occasionally broken, but this I attribute to the want of sharpness and strength of the chain to deal with such tough matter. A stronger instrument would be better adapted for such a purpose.

When castrating with the ecraseur the cord should be straight and the chain placed round it and be *slowly* worked until the testicle is off.

I think Captain Russell has as an assistant a gentleman (Mr. G. Wartnaby) who, during his course of study at the Veterinary College, witnessed the operation at my infirmary, with several other pupils, and can testify to its safety.

THREATENED INTRODUCTION OF CATTLE PLAGUE INTO NATAL.

By S. WILTSHIRE, Colonial Veterinary Surgeon, &c.

WE have received a very interesting communication from Mr. Sam. Wiltshire, Colonial Veterinary Surgeon, from which we make the following important extracts:

Mr. Wiltshire writes from Pietermaritzburg, Natal, under date of September 20th. He says, I am now very much concerned about the importation of foreign cattle, as we are threatened with the introduction of cattle plague, *i.e.* rinderpest, from Madagascar, where that disease is said to be, and from whence it was conveyed to the Mauritius, causing a fearful loss of cattle.

Directly I heard of it I called the attention of the Government to the matter, and we at once wrote off to the Mauritius Government for information, and soon received in reply a report from the President of a Commission appointed to inquire into the matter. The report stated that the disease presented all the symptoms and pathological appearances observed in Europe; that the recoveries were only about 4 or 5 per cent., and that 11,022 cattle had died in about three months (newspapers by the same mail said about 15,000).

On receiving this information, I was requested to report on what measures it was advisable to adopt here, and I recommended that the importation of animals should be prohibited from Madagascar and Mauritius and its dependencies.

This was done by Proclamation a few days ago (Sept. 20th), and now we learn that three cargoes are on their way here from Madagascar. From information since received I gather that these cattle come from the opposite side of the island to where the disease was known to be, and that there was very little communication between the two divisions, as a high range of mountains exists between them, with passes here and there. Cargoes of cattle have also been landed here during this month and are healthy at present, so perhaps by placing those now coming in quarantine, and getting them killed for the market, we may escape; but if there is any sign of disease, the whole lot will be destroyed, and the utmost precautions taken.

* * * *

I had charge of the Remount Dépôt here from 6th January to 3rd of this month, September, and hard work it was. We bought about 3000 horses, besides rejecting a large number for unsoundness, &c., and in addition to this work, I have had to attend to the sick. We had a bad season for fever and other things.

The losses of cattle from pleuro-pneumonia, overwork, poverty, and other causes, have been enormous; the roads are bordered with skeletons, and the stench at some places is quite sickening.

I have done my best to induce the Government to carry out the laws and adopt regulations without success, but hope for better things some day.

Meat is getting very dear here, and since I began this letter I have heard that the number of sheep in Natal fit for the butcher would not supply this town, of about 6000 inhabitants all told, for more than three weeks if all were collected together.

RETENTION OF A DEAD FÆTUS IN A COW.

By J. LANG, Kadina, South Australia.

SIRS,—Having read in the May number of the *Veterinarian* of a "Case of Retention of a Dead Fœtus in a Cow," I thought it might be interesting to your readers to hear of a similar instance occurring at Kadina, South Australia. The cow referred to belonged to Captain Anthony, Kurilla Mine,

and was believed to have calved in the scrub; but as no calf was found, the cow was brought home and milked for two or three months, when as she was getting dry, she was fatted and killed about four months after her supposed calving, and on opening her a full-grown dead foetus was found in the womb. All the soft parts were in a state of decomposition, many of the bones being laid bare, the hair easily rubbing off the skin with the finger's touch. The time for her calving having fully expired, and indications of it having taken place being observed, it was supposed that she must have left her calf dead in the scrub.

Trusting this parallel case may interest,
I am, &c.,

To the Editors of the 'Veterinarian.'

NOTE FROM MR. MOORE, M.R.C.V.S.

11, UPPER BERKELEY STREET, PORTMAN SQUARE
Nov. 13th, 1879.

SIRS,—Will you kindly afford me space in your pages to correct a slight error in your last number? In the comments at the foot of the Report of the Meeting of Veterinary Surgeons held at Freemasons' Tavern on October 1st you say it was inserted by my "special request."

I think my letter to you cannot be so construed; indeed, I would not be so rude as to imagine that an independent journal like the *Veterinarian* required a "special request" to insert an article so interesting to the profession as the report referred to.—I am, sir, your obedient servant.

[Unfortunately we have not preserved Mr. Moore's letter, and cannot, therefore, quote the exact words he used in asking for the report to be published. The terms employed were, however, so precise that we considered that they conveyed nothing short of a special request that the report might appear in the pages of our journal.—EDS.]

To the Editors of the Veterinarian.

LETTER FROM A REJECTED STUDENT.

SIRS,—I am glad to find that an arrangement has been made with the Royal College of Veterinary Surgeons and the Highland and Agricultural Society, by which the holders of the Society's veterinary certificate are to be admitted members of the Royal College on the payment of certain fees.

At the same time I understand that the Highland Society is to cease holding examinations, but not to disappoint those students who may have entered the schools with a view of taking the Society's certificate, that unless fifteen students entered their names no examination will be held. Now, there seems to me to be some doubt about this; for if correctly reported a student may attend a whole session, and at the end will not be examined owing to the number not being sufficient. I consider it only just that rejected students should be allowed to go up again for the Highland Society's certificate without attending the veterinary schools in the interim. There are some students who have attended four or five sessions, and it is well known that they cannot again present themselves at the Royal College examinations, they having ceased attendance under the old rules.

Now, as the Royal College of veterinary surgeons admits the holders of the Highland Society's certificate by paying certain fees, and without undergoing any examination, arrangements should be made that rejected students should be allowed up again without attending the schools. They have all the text-books at home, they know what to study, and by doing so they may be found to be up to the mark if again allowed to try.

I trust this matter will be considered by some members of the Council with a view of allowing rejected students to have a chance, they having spent so much money and time, and after all are nothing but quacks.

Yours, &c.,

A REJECTED STUDENT.

To the Editors of the 'Veterinarian.'

Pathological Contributions.

CATTLE PLAGUE.

A MOST important step has been taken by the Russian Government towards the suppression of this disease in certain localities. The Imperial Council, at a general meeting, have taken into consideration the representation of the Minister of the Interior respecting the slaughtering of diseased horned cattle, and, according to the official gazette of 13th July, 1879, instructions have been issued for the slaughter of infected and suspected animals, and the indemnification of the owners.

Cattle plague still prevails to a considerable extent in Austria. The latest reports state that the disease exists in

four districts of Croatia and Slavonia, in three districts of the Croatian Slavonic military frontier, in four districts of Carniola, in five districts of Styria, and in one district of Dalmatia.

PLEURO-PNEUMONIA.

SINCE the period when the Privy Council issued an order for the slaughter of all cattle from the United States landed in this country a very considerable amount of energy has been displayed in the different states, not only with a view to ascertain the prevalence of this disease, but also in the slaughter of large numbers of diseased animals and infected herds.

Several outbreaks of a most extensive character have occurred. In the State of New York, up to the 1st of October last, the number of infected stables in the City of New York was 67 out of a total of 1100, and the number of infected cattle 470. In New Jersey, out of 15,000 animals examined, 112 herds, containing 874 animals, were quarantined, and 350 cases of actual pleuro-pneumonia were registered. Serious outbreaks of the disease have also been detected in the states of Pennsylvania and Philadelphia.

The action taken by the Netherlands Government still appears to keep this disease in check, as only five cases were reported to have occurred during the four weeks ending the 4th of October.

SPLENIC FEVER AND SHEEP SCAB.

THE following diseases have lately been reported from Denmark, namely, splenic fever in cattle, splenetic erysipelas among swine, and scab in sheep.

Carbuncular fever appears to be very prevalent in some of the provinces in Italy, the disease having been detected in twenty-five stables in the provinces of Reggio, Calabria, Potenza, and Caserta; glanders also has been reported in the province of Potenza.

An official notice has been issued by the Government of Oldenburg, enacting that, after the 11th of November, all cattle coming from Great Britain or America will be subjected to a veterinary surveillance for the term of four weeks, and after that can only be removed inland with a declaration of health by the veterinary inspector.

CONTAGIOUS DISEASES (ANIMALS) ACT, 1878.

RETURN of the NUMBER of PLACES in GREAT BRITAIN upon which Contagious or Infectious Disease (except Sheep-Scab) has been reported to have existed during the Week ended November 8th, 1879, with particulars relating thereto.

PLEURO-PNEUMONIA.

| | Farms or other Places. | | | Cattle attacked. | | Diseased Cattle. | | | | Cases which existed in previous Weeks not reported until this Week. | |
|--|--|---|---|--|---------------------------|------------------|-------|------------|------------|---|------------------|
| | Number reported upon this Week which have been previously reported upon. | Number upon which Fresh Outbreaks have been reported to have taken place during the Week. | Total Number reported upon during the Week. | Remaining diseased from the previous Week. | Attacked during the Week. | Killed. | Died. | Recovered. | Remaining. | Fresh Outbreaks. | Cattle attacked. |
| ENGLAND. | | | | | | | | | | | |
| COUNTY.* | | | | | | | | | | | |
| Buckingham | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Cambridge (ex Liberty of the Isle of Ely). | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Cumberland | 4 | ... | 4 | ... | 2 | 2 | ... | ... | ... | ... | ... |
| Derby | 7 | 1 | 8 | ... | 2 | 2 | ... | ... | ... | ... | ... |
| Essex | 21 | 2 | 23 | ... | 8 | 7 | ... | ... | 1 | ... | 3 |
| Hertford | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Huntingdon | 2 | ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... |
| Kent (ex Metropolis) | 6 | 3 | 9 | ... | 8 | 8 | ... | ... | ... | ... | ... |
| Lancaster | 17 | ... | 17 | ... | 1 | 1 | ... | ... | ... | ... | ... |
| Leicester | 5 | ... | 5 | ... | 2 | 1 | 1 | ... | ... | ... | ... |
| Lincoln, Parts of Holland | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Middlesex (ex Metropolis) | 3 | ... | 3 | ... | 4 | 4 | ... | ... | ... | ... | ... |

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GLANDERS.

| | Farms or other Places. | | | Horses attacked. | | Diseased Horses. | | | | Cases which existed in previous Weeks not reported until this Week. | |
|-------------------------------------|--|---|---|--|---------------------------|------------------|-------|------------|------------|---|------------------|
| | Number reported upon this Week which have been previously reported upon. | Number upon which Fresh Outbreaks have been reported to have taken place during the Week. | Total Number reported upon during the Week. | Remaining diseased from the previous Week. | Attacked during the Week. | Killed. | Died. | Recovered. | Remaining. | Fresh Outbreaks. | Horses attacked. |
| ENGLAND. | | | | | | | | | | | |
| COUNTY.* | | | | | | | | | | | |
| Bedford | ... | ... | ... | ... | ... | ... | ... | ... | ... | 1 | 1 |
| Essex | ... | 2 | 2 | ... | 2 | 2 | ... | ... | ... | ... | ... |
| Kent (ex Metropolis) | ... | 1 | 1 | ... | 1 | 1 | ... | ... | ... | ... | ... |
| Middlesex (ex Metropolis) | ... | 2 | 2 | ... | 2 | 1 | ... | ... | 1 | ... | ... |
| Worcester | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| The Metropolis | 9 | 16 | 25 | 3 | 24 | 25 | 1 | ... | 1 | 2 | 2 |
| WALES. | | | | | | | | | | | |
| COUNTY.* | | | | | | | | | | | |
| Anglesey | 1 | ... | 1 | 1 | ... | ... | ... | ... | 1 | ... | ... |
| TOTAL | 11 | 21 | 32 | 4 | 29 | 29 | 1 | ... | 3 | 3 | 3 |

FARCY.

| ENGLAND. COUNTY.* | FARCY. |
|-------------------------------------|--------|
| Essex | 1 |
| Hertford | ... |
| Middlesex (ex Metropolis) | 2 |
| Norfolk | ... |
| Surrey (ex Metropolis) | 1 |
| The Metropolis | 9 |
| TOTAL | 13 |

FOOT-AND-MOUTH DISEASE.

| ENGLAND. COUNTY.* | | | | | | Animals attacked. | | Diseased Animals. | | | | Animals attacked. |
|--|-----|-----|---|-----|-----|-------------------|-----|-------------------|-----|-----|-----|-------------------|
| | | | | | | | | | | | | |
| Cambridge (ex Liberty of the Isle of Ely). | 1 | ... | 1 | 86 | 10 | ... | ... | ... | 96 | ... | ... | ... |
| Devon | ... | 1 | 1 | ... | 1 | ... | ... | ... | 1 | ... | ... | ... |
| Dorset | ... | 1 | 1 | ... | 1 | ... | ... | ... | 1 | ... | ... | ... |
| Durham | 2 | ... | 2 | 9 | ... | ... | ... | 6 | 3 | ... | ... | ... |
| Huntingdon | 1 | ... | 1 | 9 | ... | ... | ... | 9 | ... | ... | ... | ... |
| Oxford | 1 | ... | 1 | 204 | ... | ... | 11 | ... | 193 | 1 | ... | 205 |
| TOTAL | 5 | 2 | 7 | 308 | 12 | ... | 11 | 15 | 294 | 1 | ... | 205 |

SWINE FEVER.

| | Farms or other Places. | | | Swine attacked. | | Diseased Swine. | | | | Cases which existed in previous Weeks not reported until this Week. | |
|----------------------|--|---|---|--|---------------------------|-----------------|-------|------------|-------------|---|-----------------|
| | Number reported upon this Week which have been previously reported upon. | Number upon which Fresh Outbreaks have been reported to have taken place during the Week. | Total Number reported upon during the Week. | Remaining diseased from the previous Week. | Attacked during the Week. | Killed. | Died. | Recovered. | Remainings. | Fresh Outbreaks. | Swine attacked. |
| ENGLAND. | | | | | | | | | | | |
| County.* | | | | | | | | | | | |
| Bedford . | 1 | 1 | 2 | ... | 6 | 4 | 2 | ... | ... | ... | ... |
| Chester . | 2 | ... | 2 | 4 | ... | 2 | 2 | ... | ... | 1 | ... |
| Cornwall . | 1 | ... | 1 | 1 | 1 | 2 | ... | ... | ... | ... | 1 |
| Derby . | ... | 2 | 2 | ... | 2 | 1 | 1 | ... | ... | 3 | 6 |
| Devon . | 2 | 2 | 4 | ... | 3 | 2 | 1 | ... | ... | ... | ... |
| Dorset . | 2 | ... | 2 | ... | ... | ... | ... | ... | ... | ... | ... |
| Essex . | 9 | 4 | 13 | ... | 44 | 34 | 3 | ... | 7 | ... | ... |
| Gloucester . | ... | 2 | 2 | ... | 6 | 5 | 1 | ... | ... | ... | ... |
| Hertford . | 1 | ... | 1 | ... | ... | ... | ... | ... | ... | ... | ... |
| Huntingdon . | 2 | 3 | 5 | ... | 15 | 5 | 3 | ... | 7 | 1 | 11 |
| Kent (ex Metropolis) | ... | 1 | 1 | ... | 1 | 1 | ... | ... | ... | 1 | ... |
| Lancaster . | 9 | 3 | 12 | ... | 3 | ... | 3 | ... | ... | 2 | 4 |
| Leicester . | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Monmouth . | 2 | ... | 2 | 1 | ... | 1 | ... | ... | ... | ... | ... |
| Norfolk . | 6 | 2 | 8 | 6 | 33 | 36 | 3 | ... | ... | ... | ... |

Facts and Observations.

DEATH FROM HYDROPHOBIA.—Many cases of death from this fearful disease have recently been recorded in the daily press, and among them we find that Mrs. Martin, residing in Gallowgate, Glasgow, died in great agony on Nov. 1st of hydrophobia. She was bitten in the hand by a dog in July last. The wound was cauterised at the time, and had apparently healed, but symptoms of the disease manifested themselves about a week prior to her death.

DUMB MADNESS, DESTRUCTION OF A PACK OF HARRIERS.—Mr. G. A. Bragg, of Moretonhampstead, who has been keeping a pack of harriers, has been obliged to have the whole of them—eleven couples—shot in consequence of their having become affected with dumb madness. It is said the disease originated with two dogs which were imported from a kennel in Cornwall. They were observed after some days to be affected, and were at once destroyed, but they had already bitten some of the other dogs, and one of these showing symptoms of disease was shot last week. The disease was found, however, to have spread to the rest, and they also have been destroyed.

ALARMING SPREAD OF RABIES AT TAUNTON.—At the Taunton County Police Court on Saturday, Nov. 15th, the Superintendent of Police reported that although several dogs affected with rabies in the district had been shot, there were still twenty or thirty dogs at large which were known to be mad, and as they were prowling about biting sheep and other animals, it was necessary that some immediate step should be taken to stamp out the evil.

It was added that mad dogs had been seen in Monkton, Bishop's Hull, Heathfield, South Petherton, and Stoke St. Gregory. It did not transpire that any person had been bitten in addition to those already reported. It was decided to call a special meeting of the divisional magistrates to consider what steps should be taken to meet the serious state of affairs which now exists.—*Western Morning News*.

AMERICAN SHEEP-SCAB LAW.—In Texas a law exists which provides that where twenty sheep owners in a county petition, Inspectors are appointed to examine any sheep about to be driven into the county, and prohibit the entry of flocks afflicted with scab.

VETERINARY SURGEONS IN ZULULAND.—We are pleased to hear that the services of members of the veterinary pro-

fession in Zululand are not likely to be passed over in silence by those in command, but on the contrary, all veterinary surgeons have been spoken of well. Colonel Buller mentions Veterinary Surgeon Duck, of the Royal Artillery, as having during the whole campaign in Zululand, as well as during the disturbances in South Africa which preceded it, proved himself to be "not only a professional officer of high ability, but a good soldier." "He accompanied me," says Colonel Buller, "on every dangerous patrol, was frequently of the greatest assistance to me, and on the occasion of the disastrous retreat from the Zlobane Mountain picked up the rifle of a dead man, volunteered, and served with the rear guard." Veterinary Surgeon Lambert, 17th Lancers, at Ulundi received a wound in the hand. Veterinary Surgeons Rayment and Hagger were present also at that victorious action.

POISON OF SERPENTS.—Some interesting observations have recently been made on the poison of serpents by M. Lacerda, in the physiological laboratory of the National Museum at Rio Janeiro, which have led him to the conclusion that, in some cases at least, the venom contains an organised ferment presenting some analogies to bacteria. M. Lacerda states that a drop of venom removed from a rattlesnake under the influence of chloroform and examined with the aid of a microscope, appears as a "species of filamentous protoplasmic matter consisting of a cellular aggregation disposed in arborescent form resembling certain lycopods." The development and reproduction of these cells is described in a paper read before the French Academy of Sciences (*Comptes Rendus*, lxxxvii, 1094). Similar phenomena were observed in the blood of animals that had been bitten by the rattlesnake, and it was found that such blood was capable of setting up the change in the blood of other animals when injected hypodermically, and that this change was followed by the death of the animal.—*Pharmaceutical Journal*.

TEST FOR CARBOLIC ACID.—Add bromine water to the suspected liquid; if carbolic acid is present a precipitate of tri-cromophenal falls; if none there is no change.

VERMIN-KILLER.—A number of chemists and others have been fined in several towns of Lincolnshire for selling poisons (generally vermin-killer) without observing the regulations required by the Pharmacy Act.

THE VETERINARIAN, DECEMBER 1, 1879.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

IS FOOT-ROT CONTAGIOUS?

THE question of the contagious character of foot-rot among sheep has been discussed from time to time ever since the detection of the disease in our flocks set scientific and practical men thinking on the subject. Recently we called attention to the existence of the disease in various parts of the country as a natural result of the wet season, which has had such a disastrous influence on animals and plants. And we observe that at a late meeting of the Tunbridge Wells Farmers' Club the contagiousness of foot-rot was the subject for discussion.

On the general question of the nature of the "infective process," we may remark that of late years our knowledge has advanced, and it is possible to demonstrate that diseases which were, and some of which now are, commonly held to be non-infectious, extend from centres to other parts of the tissues by a process which is closely in effect allied to inoculation. That foot-rot of sheep is one of the maladies which spreads by infection from a diseased spot in the foot-tissues to the healthy parts of the organ may be admitted without difficulty; and that the infective matter will produce a similar disease in the healthy foot structures of another animal is a proposition which at any rate may be accepted as a basis for experiment.

One of our colleagues succeeded some years ago in producing foot-rot in the most pronounced form by rubbing the matter from a diseased foot in the skin between the digits of healthy sheep, and at the same time keeping the animals in moist litter. On dry ground it was found impossible to cause the disease to become developed beyond the first stage. The characteristic eruption and discharge could be produced, but the diseased surface rapidly healed up when the feet were kept dry and clean. This fact in the history of foot-rot is pretty well known

to all practical men, and at the meeting referred to the effect of wet seasons was admitted, but the prevailing opinion was that the wet soil was only a favouring condition, whilst the true cause of the spreading of the disease was infection.

Mr. Noakes, M.R.C.V.S., is reported to have said, in thanking the club for having invited him to be present that evening, he should feel it his imperative duty to express an opinion that was diametrically opposed to the opinions of many eminent members of the profession. The leading veterinary professors had held that foot-rot was not a contagious disease. In his opinion it was one of the most contagious diseases known to any class of animals. He had arrived at this conclusion after having seen the most demonstrative proofs of its contagious nature, and he felt he would only be performing his duty in saying so. Their president had said that the only way of stamping out the disease, which he had very properly called a plague to the country, was to get it scheduled as a contagious disease under the Contagious Diseases (Animals) Act. He was very much surprised at its not having been so scheduled. He should be able to prove conclusively that foot-rot was quite as contagious as scab, the foot-and-mouth disease, the cattle plague, or pleuro-pneumonia (hear, hear). He would not stop at his own experience, nor would he depend upon the experience of his friends, but would, if allowed, go back to some of the ancient writers and then to modern opinion. 'Spooner on Sheep' believed it to be decidedly contagious. This book was written many years since. Now, contagionists had said that diseased sheep had failed to produce it on dry lands. This was, however, not sufficient to establish its non-contagiousness, as when the hoof is dry, strong, and free from cracks and fissures, there was no disposition to absorb. 'Blacklock on Sheep' had said, "It is so prevalent in downs and pleasure grounds that they are in many instances reduced in value as a mere trifle as a pasture for sheep—they are said to be infected with this disease—and having once become so the vicissitudes of seven years are scarcely sufficient to destroy the contagion." If this remained in the land for seven years, and the contagion was still there, why should it not

be recognised by the Act? It was not right to say that all cases arose from contagion, for he believed it to be a disease which might be self-generated if exposed to the causes likely to produce it. One diseased animal would be sufficient to taint a thousand. Mr. Kent, in an essay before the Veterinary Medical Association in 1846, with reference to contagion in this disease, said, "I am sorry to differ with Professor Simonds. Still I feel satisfied it is contagious, both from what I have seen and from what I have heard from large sheep owners. A diseased ram was placed with a sheep and lamb; on the fifth day the lamb went sore footed, on the seventh the hoof had slightly separated from the upper part, next day it was lame, and gradually followed on until the disease was fully developed."

Mr. Noakes's remarks were accepted with approval by the meeting, and other speakers followed him to the same effect. Our experience, which has been considerable, does not enable us to allow that the disease is "one of the most contagious diseases known to any class of animals." On the contrary, we have been obliged to conclude that, while the infective process accounts for the extension of the disease in the tissues of the foot, when it is once established, it is most difficult to communicate the affection from one sheep to another, and we are perfectly certain that it was never so communicated in the space of five days.

On the question of legislation for foot-rot, we have at present nothing to suggest, beyond an expression of opinion, that if the farmers all over the country were canvassed very few would be in favour of submitting to restrictions on the trade in sheep on that account; but, in reference to the causes of the rapid extension of foot-rot among a flock from the introduction of a few diseased animals, we long ago arrived at the conviction that in most if not all of these cases the disease would have been found on investigation to have been foot-and-mouth disease, and not foot-rot. The dictum of the shepherd is often the only evidence which the flock-master has, or for that matter desires, and we know that shepherds in general do not believe in foot-and-mouth disease among sheep.

Extracts from British and Foreign Journals.

ISOLATION OF THE OPTIC NERVE-FIBRES AND GANGLION-CELLS OF THE MAMMALIAN RETINA.*

DR. GEORGE THIN, in an article in the *Journal of Anatomy and Physiology*, says that the isolation of the ganglion-cells and optic nerve-fibres of the retina has certainly not been found by histologists to be invariably an easy task, and he can testify from experience that methods which are well fitted for the observation and study of other parts of the retina, destroy the processes of the ganglion-cells and the nerve-fibres. Max Schultze has acknowledged this difficulty in his article on the retina in Stricker's 'Handbuch,' published in 1872. Dr. Thin is induced, therefore, to believe that the publication of a method by which he found the isolation of these elements singularly easy, may be considered justifiable.

The method holds good for the retina of the cat and the sheep; but there can be little doubt that it will prove equally useful in the case of many other mammalia. His observations have been limited to the eyes of these two animals.

It is well known that if a sheep's eye be placed in a sufficient quantity of alcohol for twenty-four hours, and at the end of that time be laid open, and the retina be then examined in glycerine, the optic nerve-fibres and ganglion-cells will be found more or less well preserved. But it is a matter of no small importance to regulate the strength of the alcohol, and diluted alcohol will be found more useful than strong alcohol. A mixture of equal parts of methylated alcohol and water is a strength that he used for some time, with such excellent results that he adhered to it during most of the time that he was engaged in examining this part of the retina; but latterly he found that, in most respects, a weaker strength secured as good preparations, and for some purposes produced better ones. For the preservation of the processes of the ganglion-cells, mixtures of one part of methylated alcohol with two of water, and one of methylated alcohol with three of water, are peculiarly well adapted. The fibres of the optic nerve expansion are well seen, whichever of these strengths is used. They may be isolated in great numbers, and for great lengths, after the bulb has been in equal parts of water and alcohol. When only a fourth strength of alcohol was employed, the nerve-fibres were, unless well teased out,

* 'Journ. Anat. and Phys.' (Humphry), xiii. (1879), p. 139.

slightly obscured by adherent granules, probably the remains of connective substance of the layer.

When the strengths of a third and a fourth were used, the bulb was allowed to remain in the fluid for thirty-six or forty-eight hours.

Although both the ganglion-cells and the nerve-fibres in eyes, treated by the above methods, can be examined at once in glycerine; it may be found advantageous to subject the retina to other processes, through which the hardening nerve elements can now pass without injury. It may be placed first in water for a short time, and then may remain overnight in staining fluids, and finally be examined and preserved in glycerine, or, after being stained, it may be passed through alcohol and oil of cloves, and preserved in dammar varnish. The glycerine preparations show both the fibres of the optic nerve expansion and the ganglion-cells. The dammar preparations are useful as permanent specimens of the nerve-fibres. In either case some careful manipulation with needles is necessary to disentangle the nerve-fibres, a process which is particularly troublesome in the dammar preparations. Of all the staining fluids tried, a solution in water of anilin blue was found to be by far the best. For the nerve-fibres anilin blue alone is sufficient; for the ganglion-cells a double staining with anilin blue and eosin is useful.

Eyes which have been placed in alcohol, as above directed, may be preserved for a long period in glycerine without the nerve-fibres or ganglion-cells suffering in the least. The effect of the glycerine by its affinity for water is to produce a complete collapse of the eye-ball. The lens preserving the shape of the anterior part of the bulb, the posterior half, is doubled up into the anterior half, forming a cavity at the bottom of which is the stump of the optic nerve. It is thus possible to prepare eyes at any time, and keep them ready for examination. He had excellent preparations of the optic nerve-fibres and ganglion-cells from the eye of a kitten, which, after being twenty-four hours in equal parts of methylated alcohol and water, had been kept sixteen months in glycerine.*—*Journal of the Royal Microscopical Society*.

* The method is one that might be used for the examination of the retina of rare animals when the eyes have to be procured from a distance. After the remarkable observation of the anastomosis of the ganglion-cells of the elephant's retina by Corti, to which there has been as yet no parallel, a further examination of the retina of that animal is very desirable. The eyes of elephants in a condition suitable for such an examination are not easily procurable, but by the use of the above method available specimens might be had from India.

INJECTION OF BACTERIA INTO THE BLOOD WITHOUT ANY TOXIC EFFECTS.*

PROFESSOR LIVON states that he has injected into the femoral or jugular veins of various dogs different liquids in a state of putrefaction—bile, urine, &c.—and containing a large quantity of *Bacteria*, without any other result than a certain amount of lassitude; the only change in the blood was an augmentation in the number of the white corpuscles; autopsy revealed no lesions. We draw attention to these statements chiefly because it does not seem to be as generally understood as it should be, that ordinary atmospheric bacteria do not set up fermentative changes in the *healthy living* organism; *Bacillus* will produce splenic fever in healthy organisms, but these forms require for their perfect development free exposure to oxygen, which is very far from being the case with *Bacterium termo*.

NUCLEUS IN BLOOD-CORPUSCLES.†

UPON reading some months ago Böttcher's demonstration of a nucleus in the mammalian blood-corpuscles after bleaching by corrosive sublimate and alcohol, it occurred to Dr. W. T. Belfield, of Chicago, that the asserted nucleus might be artificial, due to coagulation of albumen and extraction of water by the reagents used. It seemed that if bleaching alone were to be accomplished, the same results should follow bleaching by other methods.

With this idea he procured specimens of fresh blood from man, the dog, rat, and turtle, exposed the corpuscles to the action of various bleaching agents—chlorine, sulphurous acid, acetic acid, a freezing temperature—then, when the colouring matter had been removed, he immersed them in weak solutions of anilin and carmine, and mounted them in distilled water. He was careful to produce as nearly as possible identical effects upon all the specimens treated by each reagent, using the same solutions for the same periods upon them all. By each method nuclei was clearly demonstrated in the turtle's blood, but in no other specimen was there any differentiation of colour. It is true that some mammalian corpus-

* 'CR. Soc. Biol.' for 1877 (1879), p. 355.

† 'Am. Quart. Micr. Journ.,' i (1879), p. 238.

cles after prolonged immersion in the colouring fluid showed staining, but that staining was invariably uniform from centre to circumference, proving conclusively the absence of a nucleus so far as carmine staining can prove anything.

On these observations he bases a strong suspicion that the alcohol and corrosive sublimate used are responsible for the appearance of nuclei in corpuscles treated by Böttcher's method. This suspicion receives support from recent discoveries as to the structure of nuclei. In the July number of the *Quarterly Journal of Microscopical Science*, Dr. Klein relates a series of observations, as a result of which he affirms the nucleus to consist of a fibrillar network, embedded in which is a ground substance; that this intranuclear network is continuous with a similar intracellular network; that nucleoli are merely the thickenings and shrivellings of these fibrils. The natural shrivelling effect of alcohol might readily produce a pseudo-nucleus in a blood-corpuscle from condensation of this intracellular network. — *Journal of the Royal Microscopical Society*.

PLANTS IN SLEEPING ROOMS.

PROFESSOR BENTLEY, in his recent lecture, "The Life of the Plant," says there exists a widely spread notion that plants when grown in rooms where there is but little ventilation, and, hence, especially in our sleeping apartments, have an injurious influence upon the contained air. This idea has arisen from a knowledge of the fact that plants, as already noticed, are always evolving a small amount of carbonic acid, and hence, when not exposed to solar light, when evolution of oxygen is also taking place, this deteriorating influence on the atmosphere is that alone which is going on. But the amount of carbonic acid which is then given off by plants is so extremely small that it can have no sensible effect upon the atmosphere in which they are placed. It might readily be shown that it would require some thousands of plants, in this way, to vitiate the air of a room to anything like the extent of a single animal, and that, therefore, the idea of a few plants rendering the air of close rooms unwholesome by this action is altogether erroneous.

While carbonic acid gas has thus been proved to be essential to plants, nearly all other gases are more or less injurious to them. Hence we have at once an explanation of the reason why plants growing in the air of large towns, and more

especially in those where chemical processes on a large scale are going on, do not thrive. The air of an ordinary sitting room, and especially one where gas is burned, is also rendered more or less unsuitable to the healthy growth of plants, in consequence of the production of injurious gases as well as from the dryness of the atmosphere.—*Sanitary Record*.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

MONTHLY COUNCIL, Wednesday, November 5th, 1879. Present:—H.R.H. the Prince of Wales, K.G. The Duke of Bedford (president, in the chair).

VETERINARY REPORT.

The Hon. W. Egerton, M.P. (Chairman) reported that the Committee had received a letter from Professor Simonds, giving the result of consultations in writing; and reports from Professor Axe upon cases investigated in the country, of which they recommended that the following be published:

Report of an Outbreak of Disease in a flock of Sheep the property of James Howard, Esq.

On the 11th of August I received instructions to inquire into an outbreak of disease in a flock of sheep the property of James Howard, Esq., of Bedford. The flock in question was located at College Farm, and originally consisted of six lots, comprising 65 shearling wethers, 14 ewe lambs, 16 ram lambs, 9 shearling wethers, 5 shearling ewes, and 10 wether lambs.

During the past winter the three first-named lots were pastured on clover, and received also a liberal supply of cake. The three lots last referred to were housed, and received as food corn, cake, and roots.

About the 15th of July the 65 wethers were turned on tares, and about four days later the 14 ewe-lambs and 16 ram-lambs were likewise placed in the same pasture. It should, however, be stated that the several lots were kept separate from each other.

About the 3rd of July the housed sheep commenced to receive tares, as well as corn, cake, &c. The lot of 10 wether lambs were at this time having a liberal amount of cabbage, and therefore only a small proportion of vetches was allowed them.

The disease first appeared on the 28th July, among the 65 wethers, and by the 7th of August it had shown itself in all the lots referred to, excepting the 10 wether lambs, which, as just stated, were only sparingly supplied with vetches. At the time of my visit 15 of the 65 wethers had been slaughtered on account of the disease, and a large number were then sick.

The symptoms presented by the latter were characteristic of the disease termed apthæ.

Early in the attack food was either refused altogether or partaken of indifferently, and the general expression was dull and listless. The mouth, at first hot and clammy, soon discharged a frothy saliva, the

tongue was moved from side to side, and the lips and face became more or less enlarged.

The tongue and lining membranes of the mouth generally were beset with small, round, white bladder-like spots, and presented also a swollen and inflamed condition. In some the mouth was extensively ulcerated, and the eruption extended over the lips and face, reaching as high as the eyes. In such cases the breath emitted an offensive odour, and the salivary discharge was blood-stained and sticky. Inability to feed, and the constitutional disturbance associated with the disease, produced great prostration and wasting. In the latter stage of the disorder diarrhoea was sometimes present, and lung complications were also frequently developed, giving rise to coughing, a discharge from the nostrils, and embarrassed breathing.

I had an opportunity of making a *post-mortem* examination of one of the sheep. In that case the lips and face presented small pustules, and the skin was extensively ulcerated. The membrane covering the tongue and the inside of the mouth generally was studded with small round white vesicles, and in some parts also with ulcers similar to those referred to in connection with the skin.

The mucous membrane of the fourth stomach, as well as that of the intestines, was redder than natural, owing to vascular engorgement, and it was besides infiltrated with serosity, and slightly thickened.

The liver was pale in colour, softer in consistence than normal, and somewhat friable.

The kidneys and spleen were congested. The lungs showed patches of consolidation and extravasated blood spots. From a full consideration of all the facts pertaining to the outbreak, I came to the conclusion that the cause of the malady was in some way connected with the vetches. Accordingly I visited the field in which they were, and carefully examined them. The plant was generally strong, and in itself as good as could be desired, but I noticed that it was not only much blighted, but that the heads of the vetches were everywhere invaded with grubs (insect larvæ). In the majority of plants examined, not less than 40 or 50 of these parasites were counted. In what relation, if any, they stand to the disease, I have not been able to determine. It may be pointed out that, by the universal presence of these creatures, the sheep were compelled to partake of a large quantity of animal matter from day to day, and to depart so far from their natural aliment as to become, for the time, semi-carnivorous. Whether these insect larvæ have any immediate connection with the origin of the malady, or whether the cause is to be found in the blighted condition of the plant, or in a combination of these with other conditions, I am unable to determine. It is highly probable, however, that when partaken of in such quantities as were here present, the grubs are capable of giving rise to considerable disturbance of the digestive canal, and laying the foundation for active disease. That the cause of the outbreak was connected with the tares is rendered probable by the fact that so soon as the animals ceased to feed on them they quickly recovered, and no further outbreak occurred.

It should be mentioned that the stock ewes were pastured on the tares on the 9th of August—two days prior to my visit—and have continued free from the disorder up to the present time. This fact does not in any way affect the conclusion arrived at in respect of the cause, inasmuch as aphthæ is a disease belonging essentially to young animals. Moreover, at that time the insect larvæ were changing their state, and dispersing.

With reference to general management, it was suggested that the use

of the tares should be discontinued, and that the sheep should be pastured on grass, and receive also crushed corn, cake, and bran. It was further advised, in the case of the sick animals, that nutritive gruel be administered, and exposure to wet and cold scrupulously avoided. A dose of aperient medicine had already been given to each of them, and this was supplemented by the daily administration of antacid and antiseptic agents.

Astringent applications were prescribed for the eroded and ulcerated mouth, and the advantage of good nursing pointed out.

J. WORTLEY AXE, Professor.

Report on an Outbreak of "Hoose" in a Herd of Calves, the property of P. Broughton, Esq., Tunstall Hall, Market Drayton.

On the 18th of September I was requested by Professor Simonds to visit Tunstall Hall, and to inquire into the facts relating to an outbreak of disease as above stated.

In the spring of the present year Mr. Broughton purchased, at different times and of various persons, 111 calves from three weeks to a month old. All of them were reared on new milk, and excepting occasional instances of slight ailments to which pail-fed calves are liable, the whole of them made good progress, and showed no signs of weakness or disease. The process of weaning was got over without difficulty, and about the third week in May all of them were turned into a park of fifty acres, during the daytime, and received besides grass, one pound of cake, half a pound of pea-meal, and the same quantity of Indian corn. In the evening they were housed, until the second week in June, when they were allowed to remain out altogether. The park occupies an elevated position, and the soil is dry, and of a light loamy character. The water-supply is derived exclusively from a running stream, and there are no swampy places or stagnant pools in the pasture. Up to the third week in July they continued to grow and accumulate flesh; after that time many of them were noticed to shrink, and gradually waste away. In the meantime, symptoms of disease appeared, and by the first week in August several of them were dangerously ill. The first animal died about a fortnight later, since which time others have succumbed, at shorter or longer intervals, until the day of my visit, when sixteen were reported dead.

During the last week in August they were removed on to aftermath, but the change had no perceptible influence on the progress of the disease. I had an opportunity of observing several calves in an advanced stage of the disorder, and others which were then regarded as healthy. A very casual examination of the latter, however, was required to satisfy me that some insidious disturbance was going on within them, and that they were all more or less in a state of disease. In several there were marked signs of unthriftiness, and in some actual symptoms of disease. The last-named instances were distinguished by their low condition, harsh and staring coat, arched back, feeble movements, depending head, dull expression, and occasional cough, aggravated by exertion. That the cough was not belonging to an ordinary cold and catarrh was shown by the absence of discharge from eyes or nose, and by its peculiar husky character. Those animals more advanced in the disease were extremely emaciated; the appetite was capricious or entirely absent; there was diarrhoea, extreme thirst, and other phenomena of fever; the back was arched, the breathing quick, and accompanied by a frequent cough; the movements were unsteady, and on the chest sounds were unmistakably

those of bronchial disease and lung consolidation. *Post-mortem* examinations were made of two animals, one of which was exhumed and the other destroyed for the purpose. The lungs in both instances presented extensive areas of consolidation, and parasites in large numbers, or their *débris*, were found in the bronchial tubes leading up to the patches of hardened lung. The mucous layer of the alimentary canal throughout showed signs of congestion, more or less intense; but this was quite a secondary matter, and consequent upon the vitiated condition of the blood from deficient aëration. I had the pleasure to confer with Mr. Kittle, veterinary surgeon, of Market Drayton, who was in attendance on the stock; and the course of treatment adopted by him I thought eminently adapted to do all that could be done to arrest the progress of the disorder.

As to the origin of the malady, there can be but small doubt that the larvæ of the lung parasites were in some way or other connected with the pasture. The very exceptional season just passed has been abundantly favorable to the life and development of these destructive creatures. Both in regard to lambs and calves we hear from all parts of the country of the most alarming losses arising out of parasitic lung-disease, the so-called "husk" or "hoose."

J. WORTLEY AXE, Professor.

Report upon an Outbreak of Diphtheria in a Herd of Pigs, the Property of the Rev. H. R. Peel, Abbott's Hill, Hemel Hempstead.

In accordance with instructions received, on the 19th October I visited Abbott's Hill, and investigated the facts relating to an outbreak of diphtheria in a herd of pigs, the property of the Rev. H. R. Peel. The herd were of the Berkshire breed, and consisted originally of 24 pigs, of various ages and of both sexes. They were divided into nine lots, and occupied three sheds. Each lot had a separate compartment.

Shed No. 1 contained a sow and five pigs in one compartment, one sow in another, and a boar in a third. Shed 2 contained two sows and one boar, in separate sties. Shed 3 contained one sow, and two lots of young pigs, three and eight months old respectively, also in separate sties.

Shed No. 3 formed one side of an open yard, into which the three eight-months-old pigs had access. These animals had also the range of a small paddock adjoining.

Sheds No. 1 and 2 were detached, and situated a small distance from each other, and also from No. 3.

The disease was first noticed on the morning of the 18th of September, in one of the three pigs last referred to, and located in shed No. 3. In the course of the same day it also appeared in four other pigs, situated in sheds Nos. 1 and 2, and in a sow occupying No. 3 shed. The pig first affected died on the day of the outbreak, and a sow far advanced in the disease was slaughtered at my request on the following day for the purpose of a *post-mortem* examination. It was pointed out by Mrs. Peel in the course of the investigation that the open yard and paddock referred to, as well as No. 3 shed, were flooded in July last, in consequence of the overflowing of an adjoining river; but a detailed inquiry into all the circumstances of the flooding threw no light on the origin of the malady. The lapse of time between the flood and the outbreak of the disease, taken together with the fact that the malady appeared almost simultaneously in parts of the farmstead where the flood did not reach, and which had no connection with it, are points strongly opposed to any

idea of causative relation between the two events. While inquiring into the general health of the farm stock, I was informed that a cow, pastured with others in an adjoining meadow, became seriously ill on the 11th of September (eight days prior to my visit), and died the same evening. The carcase of this animal was opened in a yard close by the sheds, and afterwards buried. In reference to the cause of death, it was pointed out that, the day previously, she had gained access to a small shrubbery skirting the pasture, and partaken freely of deadly nightshade. It was also noticed, in confirmation of this view of the matter, that others of the same herd had suffered from the effects of the plant at the same time, but in a less degree. I was particular to inquire as to the prevalence of human diphtheria in the neighbourhood of Abbott's Hill, as it is somewhere recorded, on the authority of Dr. Sanderson, that pigs have contracted the malady by devouring the excrement of persons suffering from the disorder. In this connection, however, I was not able to gain any clue to the origin of the disease. In the circumstances of food and water there was nothing to explain the cause of the outbreak. The former consisted of "top-pings" and wash from the house. It should be mentioned, in regard to the former, that the stock from which the supply was being drawn had been in use for two or three weeks. The water supply was obtained from a spring, and is said to be of good quality. It was used not only for pigs, but likewise for horses and cattle, and in some instances also for human consumption. Notwithstanding a most minute inquiry into all the circumstances and surroundings of this herd, I was unable to arrive at any conclusion as to the channel through which the disease had been introduced. No fresh stock had been brought on to the farm for any purpose whatever, nor had any of the pigs passed off the premises at any time. Whether the malady can arise *de novo* or not is a question most interesting to consider. But the peculiar habits of the pig render it altogether unfitted for such an inquiry.

The symptoms of the malady were very characteristic of diphtheria—so much so, indeed, that Mrs. Peel, who had had some experience of that disease in man, at once recognised it. Illness was invariably ushered in by shivering. This was quickly followed by swelling of the throat. At first the enlargement was soft, and pitted on pressure, but soon became hard and resisting. The breathing was quick at first, and afterwards became embarrassed, and was with difficulty performed. Each act of respiration was accompanied with a wheezing sound, and the voice was thick and harsh. In this condition the mouth was opened and the tongue protruded. The gait was stiff and unsteady, and in the more advanced state of the malady dulness and stupor were more or less intense. The eyes and nostrils discharged a mucous or mucopurulent fluid, and the general indications of fever were strongly marked. The lesions observed *post-mortem* were essentially those of diphtheria, and consisted more especially of infiltration and swelling of the tissues of the neck, tumefaction of the tonsils, and the presence of a dirty-grey granular-looking false membrane on the internal surface of the throat.

The treatment consisted in the administration of saline aperients, followed by antiseptic agents. A complete change of food was also ordered to be made, and the whole of the sties and their fittings to be thoroughly cleansed and disinfected. After my visit the animals all quickly recovered, and no further extension of the malady has since occurred.

J. WORTLEY AXE, Professor.

Dr. GREENFIELD had attended the meeting of the Committee, and stated that the investigations on splenic apoplexy and quarter-evil are going on at the Brown Institution. Only four cases of quarter-evil had been reported, and about £13 of the grant last made had been expended, leaving a balance in hand of £122 15s. 3d. Dr. Greenfield specially urged the desirability of members of the Society giving early information of any outbreak of splenic apoplexy or quarter-evil taking place, as frequently notice was received too late to be practically useful. The Secretary had been instructed to make applications to owners of stock for professional and other fees, and the expenses incurred in visiting their farms. Professor Simonds had promised some notes on glanders for publication in the *Journal*. The Committee gave notice that at the next Council Meeting they would apply for the renewal of the veterinary grant for 1880, which would not be drawn till required.

This report was adopted.

THE GLASGOW VETERINARY COLLEGE.

THE winter session of the Glasgow Veterinary College was opened yesterday afternoon, Professor Knox delivering the inaugural address. The chair was occupied by Dr. Adams, and among others present were Sheriff Clark, Rev. Dr. Johnson, Camburslang; Rev. Mr. Storry, Carmunnock; Rev. Mr. Watson, Glasgow; Mr. Graham, Lambhill; Mr. Turnbull, Lambhill; Mr. Robertson, Glasgow; and representatives of the veterinary profession from Inverness, Aberdeen, Perth, Stirling, and intermediate towns.

Professor Knox began his address by stating his ideal of the veterinary profession.—I have a very high ideal (he said) of what the veterinary profession ought to be, and of the respect its members ought to obtain, not only from the holders of stock in this country, but from all classes of the community. When I think of what vast interests will one day be committed to your charge; that, for instance, one great department of preventive or state medicine—the food supply of the people—will almost entirely be under your supervision, and the lives, therefore, of the lieges at your mercy; that you will be the chief cultivators of that boundless field of comparative pathology and the chief exponents of its hidden treasures; that it is to your researches the physician looks for the clue to guide him in his investigations into the natural history and rational treatment of such diseases as rabies or hydrophobia, glanders, tubercle, and many others which, to conceal his ignorance, he is content at present to term specific; that it is from researches and experiments in comparative therapeutics the medical practitioner is anxiously awaiting additions to those means by which he is further to relieve human suffering and prolong human life; nay, more, when I consider what is to be your daily and lifelong task—to interpret the wants of the great brute creation, to divine, as it were, the significance of its groans, to relieve its unexpressed pains, and to give a voice to its hitherto too often unheeded sufferings, I feel that your profession is a most noble one, and that its members ought to be the most highly gifted and the most perfectly trained of our scientific men. But, gentlemen, I am sorry to confess that I feel at the same time that as yet we have advanced but a very short way to the realisation of this ideal. Perhaps the blame lies with others as well as with ourselves. Indeed, seeing how necessary highly

educated veterinary surgeons are to the welfare of the general public, I am sure there are many here who, like myself, cannot conceal our astonishment that so little has been done for the profession by the state or by the outside public. We have all seen the public money lavishly squandered, even by the most stingy of Governments, and that, too, upon objects bearing perhaps even less directly upon the public weal. Wherever man's life, or his power of doing work for the state, at least, are so openly menaced by hardship, or hunger, or disease, that the danger cannot be overlooked, but is seen by everybody, Royal Commissioners proceed to investigate into it, the whole machinery of Parliament is set in motion to remedy it, and money is forthcoming in abundance. But let the danger be but ever so slightly veiled, either from its own intrinsic nature or from the ignorance of observers, no matter how insidious its progress may be or how widespread its ravages, how slow we are to remedy it, or the remedy takes the form of a mere temporary expedient. When, for instance, an epidemic of hydrophobia occurs, as it did two years ago in Glasgow, lengthy proclamations are issued by the terror-stricken magistrates, much money is spent, much labour is required, many men are employed, and all for what?—to catch and drown a few stray curs. Now, allow me to ask, was that a scientific proceeding worthy of a large and wealthy corporation? Again, certain diseases break out among our cattle. A cry goes up, whether well or ill founded I say not, that it is from other lands these diseases come; and in answer to this clamour, by Act of Parliament foreign animals wharves, with slaughter-houses and their appurtenances, are at once erected at our sea ports, and the fiat goes forth that no cattle or sheep, however free from disease they may be, provided only they hail from a foreign shore, shall be turned loose to graze in our fields or be recruited after a long voyage before being converted into food for the people. Again I ask, is this a scientific method of procedure? Surely not. It may be expedient in the present lamentable state of ignorance, but of itself is a confession of ignorance, of fear, and perhaps even of self-interest on the part of a few. But, in my humble opinion, it is beginning at the wrong end. Would it not be better and wiser too to spend money on the investigation of the causes, the natural history, and the results of these diseases, their modes of propagation, their limitation, and their treatment; to find out how much, perhaps, our inhuman methods of housing animals and conveying them on board ship from one port to another, our inattention to ventilation, and our wretched systems of drainage, are responsible for the origin and spread of contagious diseases? Would it not, in a word, be far wiser to devote some part of our means to the proper educating of scientific veterinary practitioners, to put the best means of study and research within their reach, and to endow them with laboratories and apparatus for the proper carrying out of their investigations. There is a good old Latin motto, *Fas est ab hoste doceri*, and in this respect we have much to learn from our Continental rivals. We have splendid examples both in France and Germany of what may be done by Government guided by an enlightened public spirit. The veterinary surgeons here present know full well the immense obligations the profession lies under to France, which may almost be called the birthplace of the veterinary art. But we owe France a still greater debt of gratitude for showing us a college like that at Alfort, so munificently equipped and endowed, and the *alma mater* of the best educated and most scientific race of veterinarians the world has yet seen. Why should Continental nations take the lead in this respect? They have no greater interest at stake

than we have, and they have not the wealth we have wherewith to carry out their plans. The only institution in this country in which comparative pathology is made a speciality is the Brown Institute in London, and for that we are indebted to private benevolence. The work done there and the instruction afforded to its students are simply invaluable. But this solitary and very small school is manifestly inadequate for a great and rich country like ours with such a valuable breed of horses and such immense herds of cattle and flocks of sheep. Why should not every veterinary college in the country have attached to them similar laboratories to those of the Brown Institute, and be presided over by men, if not of the calibre, at least with something of the spirit of its superintendent, Professor Burdon Sanderson. Why should, let me ask again, the very elements of education in the primary schools of the country, and Latin and Greek, mathematics and philosophy, in the Universities, not to speak of the professions of law, divinity, and medicine, receive such largesses from the public funds. I may tell you that the two Universities of Glasgow and Edinburgh alone have within the last few years received about £200,000 from Government, while the veterinary profession and its colleges are still left out in the cold. But it is not only money that we want; we want also superintendence, guidance, and, in fact, much the same treatment that the medical profession has received. We would be a great deal the better, I think, for a Commission to investigate our position, the means to be adopted both for teaching and examining students, the regulation of the years of study and of the examinations, from the preliminary examination in education to the final proficiency. The veterinary colleges might, even in Scotland, at least be connected in some way with the medical faculties of the Universities, as indeed the Brown Institute is already connected with the University of London. This was a frequently expressed wish of a very good friend and patron of this college, I mean Professor Allen Thomson, and no one can doubt but that it would be an alliance fraught with advantage to both parties and professions. It is certainly a point to be steadily kept in view. In concluding his address, Dr. Knox mentioned that an extension of the school in Buccleuch Street is in contemplation for next year. You are all aware, he said, that at the present moment the farmers of this country generally are in a sad way—they are being ruined, they say, by the inclement weather, bad harvests, and foreign competition. A Royal Commission has been appointed to enquire into their case, and see what can be done for them. It will be some time, however, before Government can come to anything like a definite opinion on the subject, or much, if anything, can be done, and meanwhile, acting on the principle that God helps those who help themselves, Principal McCall has determined to open a department for the teaching of agriculture in connection with this school. We in Scotland have always been famous for our methods of farming, just as we have been for our parish schools. But we have found out recently that in regard to the latter improvements were not only possible but absolutely necessary, and so it may be as regards farming. At all events, the present seems a highly favorable opportunity for inaugurating a course of instruction, both theoretical and practical, for the younger generation of farmers. In these days of high farming it will prove a great boon to many young men in a short course of lectures and demonstrations to be put at once in possession of the most essential information as regards the nature of soils, the proper food of plants, and the best methods of cultivation, with the results of the most recent experiments on these subjects. Lectures on all these subjects, illustrated by experiments,

will be delivered in the college, and the farm at Flemington will be placed in connection with the department. This farm is quite a model one. It contains 460 acres of land. In its byres are at present over 100 cows, and on its pastures between 300 and 400 sheep. All manner of crops are grown on the best and most improved methods. Steam machinery and implements of the most expensive description are employed, and no necessary expense is spared to bring the land and the animals upon it to the highest state of cultivation and breeding. I look forward to immense practical benefits being conferred upon the community at large, as well as upon our future generations of farmers by this school of instruction.

At the close of the address a cordial vote of thanks was passed to Dr. Knox, on the motion of the *Chairman*; and on the motion of *Principal McCall* a similar compliment was paid to Dr. Adams for presiding.—*Glasgow Herald*.

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

THE usual quarterly meeting of the above Association was held at the Albion Hotel, Manchester, on Wednesday, October 15th, 1879. W. Dacre, Esq., President, in the chair.

The following members and friends were present:—Lieut.-General Sir F. Fitzwygram, Bart., Prof. Williams, Mr. Geo. Fleming, Lieut.-Colonel Lockwood, 20th Hussars; W. Pallin, 20th Hussars; James Lambert, 17th Lancers; Stewart M. Wilson, 12th Lancers; Messrs. P. Taylor, T. Greaves, Tom Taylor, W. A. Taylor, John Lawson, Alex. Lawson, M. J. Roberts, T. Hopkin, E. Faulkner, J. B. Wolstenholme, G. Humphries, James Paton, W. Holland, M. Green, and Mr. Simcroft, of Manchester; H. Fergusson, and Mr. Harrison, Warrington; W. G. Schofield, Pontefract; Messrs. W. and J. Leather, J. W. Moore, and C. W. Elam, of Liverpool; Messrs. Cartwright and Hill, Wolverhampton; Messrs. J. A. Polding and T. Briggs, of Bury; J. B. Taylor, Ashton; Messrs. Bunnell and Hart, of Oldham; J. Howell, Rochdale; W. Woods, Wigan; James Brookes Pilkington; A. Darwell, Northwich; Sept. Lambert and Sam. Greaves, of Stratford; John Cuthbert Leeds; C. Challinor, Pendlebury; J. O. Martin, Altrincham; A. Prescott, Pendleton; J. C. Atkinson, Stockport; R. Roberts, Kendal; W. Whittle Mosley; H. Thompson, Aspatria; W. Broughton, Leeds; J. B. Unsworth, Market Drayton; M. Burnley, Lancaster; Jas. Storrar, Chester; P. Walker, Bedford; J. Litt, of Bolton; M. E. Naylor, Wakefield; Dr. Renshaw, Altrincham; Dr. Owen, Manchester, and the Secretary.

Telegrams and letters of excuse were received from Dr. Gamgee, Owens College, Manchester; Prof. Simonds, Prof. Pritchard, Prof. Walley, M. J. Harpley, T. A. Dollar, J. Welsby, J. Marshall, P. Walker, H. Bean, D. Hutcheon, T. S. Faulkner, A. Brooks, W. A. Cartwright, W. Johnson, G. Morgan, R. Reynolds, S. L. Buckley, A. L. Gibson, S. F. Fallding.

The minutes of the last meeting were duly read and confirmed, after which,

Mr. T. Taylor proposed for election, as member of this Association, Mr. George Humphries of Manchester, seconded by *S. Locke*; carried. *Mr. E. Faulkner* proposed Mr. W. Holland, of Manchester, seconded by *Mr. Whittle*, and carried. *Mr. W. Leather* proposed Mr.

J. Leather, Senr., of Liverpool, seconded by *Mr. Jas. Paton*, and carried. *Mr. S. Locke* proposed *Mr. H. T. Hodgkinson*, of Rochdale, seconded by *Mr. T. Taylor*, and carried. *Mr. Challinor* nominated for membership *Mr. Litt*, of Bolton. *Mr. Bromley*, nominated for membership *Mr. R. Roberts* of Kendal. *Mr. Wm. Whittle* then begged leave to nominate as Honorary Associate of this Association *Lieut.-General Sir F. Fitzwygram, Bart., Prof. Williams, Geo. Fleming, Peter Taylor, and Thomas Greaves.*

Mr. T. Taylor said he had received a letter from *Dr. A. Gamgee*, of Owens College, Manchester, in which he had kindly promised to read before this Association (during the winter) two papers "Upon the Physiology of Digestion, with illustrations." This notice was received with great satisfaction by all present, and the secretary was deputed to write to *Dr. A. Gamgee* thanking him for his kind offer.

Mr. Storrar of Chester, then exhibited a specimen of skin disease in a cow, with photograph of the animal.

Mr. Pallin brought forward a specimen of disease of the intestine. The subject was a troop mare. She had had repeated attacks of colic since July, 1877, but in September last she died after one of them. Upon making a post-mortem examination, there was found a large sac of bowel at the commencement of the floating colon, which was impacted with food. *Prof. Williams* gave it as his opinion that the intestinal wall at this particular part had become paralysed, and in consequence could not act upon its contents.

Mr. Pallin also exhibited an extraordinary specimen of rupture of muscles of the neck and dislocation, the dentata being twisted completely upon the atlas; he also showed a drawing and photograph of the position in which the animal was found dead. It had placed its head over a top bar at the box door, and firmly laid hold of the bottom bar with its teeth, and became thus fixed. Death must have been almost instantaneous.

Mr. Geo. Fleming then read a lengthy and instructive paper upon the "Responsibility of the Veterinary Surgeon," which was listened to with great interest by all present. A long discussion followed, in which a good many members and friends took part.

Mr. Greaves observed—Being the member who proposed that *Mr. Fleming* should be requested to bring before us this subject, I think it is only right that I should express my best thanks to him and also offer him the best thanks of the Lancashire Veterinary Medical Association for having complied so readily and so kindly with our wishes, and allow me to say that the manner he has placed the matter before us of the "Responsibility of the Veterinary Surgeon" reflects the highest possible credit on him. This subject has assumed a very serious aspect of late years, and it behoves us to carefully consider it, and if it be possible to place ourselves in a protected position. At this moment one of our members is being sued for £173, loss on a horse he examined. I have been in practice nearly half a century, and during that time have been almost daily engaged in the performance of operations and in the examination of horses as to soundness. Up to the present time I have not once been asked to make good any loss that may have been incurred by a purchase having been made on the faith of the soundness of my opinion. I do not for one moment presume to say that I may not be held responsible to-morrow for some loss or other, but what I wish to say is this: I can conceive of no greater hardship or injustice to a veterinary surgeon than after he has made a careful, deliberate, and sincere examination, having exercised the best abilities he possesses, and given the opinion he has

formed honestly, that he should be held responsible for any loss that may ensue on the purchase of a horse when the assumed cause of unsoundness is one of a doubtful or conjectural nature.

The best way that occurs to me to protect ourselves is this: let us do our duty with the greatest possible care whether it be an examination or an operation, and in our written certificate of soundness or unsoundness, as the case may be, clearly set forth "that we give this opinion in the full belief that it is true, but be it hereby distinctly understood we do not hold ourselves in any way pecuniarily responsible for any consequences or losses that may take place."

This subject has at various periods of my life caused me much study and earnest attention. I find in 1868 I read a paper before the Liverpool Veterinary Medical Association, upon it. I took counsel's opinion at the time, which will be found reported at page 256 and following pages in the *Veterinarian* for that year. I strongly advised every veterinary surgeon to have printed on his certificate the following words:—"This opinion is given to the best of my knowledge and belief, but I do not hold myself pecuniarily responsible for such opinion or the consequences of such opinion." I respectfully throw out this suggestion for the consideration or for the adoption of my professional brethren.

Sir F. Fitzwygram said—I quite agree with all Mr. Fleming has said about the responsibility of the veterinary surgeon, but I am inclined to place the responsibility upon a different, and perhaps, upon somewhat higher, grounds than that on which Mr. Fleming has placed it. It rests chiefly on account of the uncertain nature of the matter in which he is called upon to judge. I will explain myself in this way: in the value of a house it is the same to-morrow as it is to-day. If an expert gives an opinion, other people give it as under exactly the same circumstances, and if he has given an erroneous judgment there are the means to rectify it. The veterinary surgeon gives his opinion upon moving matter; the value moves about from day to day; it may be sound to-day and unsound to-morrow. I am inclined to place the responsibility chiefly upon the ground that the matter in which he is called upon to judge is one upon which there is very great doubt. The veterinary surgeon should be a man able and conscientious, who can command the confidence of his employer, and I believe that the body of veterinary surgeons do command that confidence, and are a credit to the profession to which they belong.

Mr. P. Taylor thanked the essayist for his admirable paper, and referred to the difficulty experienced by the veterinary surgeon in the examination of horses. Veterinary surgeons were considered by the public to be experts, and are therefore considered to bring to that position a certain amount of knowledge, but in doing so they have a living machine in different condition at different times. He did not think it was in the interest of himself or his professional brethren to give an opinion immediately. The animal should be left with them two days at least to give a fair opinion.

After a few remarks from several other gentlemen respecting Mr. Fleming's paper, the President suggested that the discussion should be adjourned until the next meeting. This was agreed to, and after a vote of thanks to the essayist and the President, the meeting terminated.

Immediately after the Members and Friends sat down to an excellent dinner, and a very enjoyable and convivial evening was spent. After the usual patriotic toasts, Mr. A. Lawson proposed "The Army, Navy, and Volunteers," in which he said the recent exploits of our soldiers,

under enormous difficulties, proved that we could still proudly say that our officers and soldiers are still what they always have been—brave and devoted to their country.

Lieut.-Col. Lockwood, 20th Hussars, very ably responded, as also *Mr. Jas. Lambert*, 17th Lancers, who referred to the war in Zululand, in which he said the veterinary surgeon was exposed to almost as many dangers as any one else. As regards the veterinary department, he would like to correct a very erroneous statement with reference to the horses of the 17th Lancers. It was reported that the horses were suffering from some disease, and could not be brought home. This was not the case, as nearly all of them were sold, and averaged £4 more than the original price in England.

Mr. Broughton, of Leeds, proposed the "Health of the Lancashire and other Veterinary Medical Associations."

Mr. Hill responded, as also *Mr. Briggs*, who as a member of the Liverpool Veterinary Medical Association, said—I have to offer to you our heartfelt thanks for your attendance this evening, the success of this meeting no doubt being due to the presence of Sir F. Fitzwygram and Mr. Geo. Fleming.

Mr. T. Hopkin then proposed the "Health of the President, Members of Council, and Examiners of the Royal College of Veterinary Surgeons."

Prof. W. Williams responded, in which he said—I thank you very much for coupling my name with the Royal College, of which I have the honour to be president. It was remarked by Mr. Hopkin that the profession at one time consisted of scattered particles. I can well understand that any one being the president of those scattered particles would have a difficult office to fulfil, but the profession now is a united body, having worked and collected the particles together like a sheaf of corn. My friend on my left (Sir F. Fitzwygram), we all know what he did for the profession, how he bound the several parts together, and how he left them.

I am very proud to say that the Council, so far as they are concerned, have well attended the meetings, and everything has worked in harmony for the well-being of the profession. I thank you for the kind manner in which you have mentioned the Royal College, and hope it will always command the respect and esteem which you at present show towards it.

Sir F. Fitzwygram, Bart., said he thanked them for connecting his name with the toast. It had been a great pleasure to him for many years to have been a member of the College, he had trust and confidence in the Council, and thought it had worked well for the best interest of the profession, and believed in future there would be no rivalry except that rivalry as to the good, best, and highest interests of the profession. He briefly referred to the work of the Council during the last few years, and said there was one measure he was most anxious to see carried out, viz. that the Matriculation Examination be conducted under the auspices of the Royal College. He should be in Scotland to-morrow, and hoped to gain the assent of the Scottish schools to the scheme which had been adopted by the Royal Veterinary College of London. In conclusion, he said they had a Council which would work with one heart and one soul for the advancement of the profession of the veterinary surgeon.

Mr. W. A. Taylor proposed the "Health and Success of the Professors and College."

Prof. W. Williams, being the only representative present, duly responded.

Mr. Greaves then proposed the next toast, viz. "The Veterinary Profession." He observed—The subject is an extensive one; it would properly

comprise the veterinary practitioner, the veterinary student, his education, the teaching of the colleges, the teachers, the examiners, and the Council. I will, however, confine myself to some of the points of progress of late years. I have been occupied in this profession for over 45 years. I have felt it to be an honour to belong to it; it is an honorable calling. I can remember the time when if a student paid his fee, however defective his education might have been, the college was obliged to receive him; it is not so now. All this is changed, and many reforms have been carried out in late years: but my toast is coupled with the name of a gentleman who is not only a most distinguished cavalry officer holding one of the highest and most honorable appointments in Her Majesty's service, but he is also a veterinary surgeon, who is not only highly respected but is beloved by us all. I need not tell you that I allude to Major-General Sir Frederick Fitzwygram, Bart. He is not only noble by birth but is noble by nature. He has proved himself both able and willing to serve us. Everything he undertakes to do is done well, and as you all know he has filled the presidential chair for three years; during those three years he never missed one general meeting, one quarterly meeting, or one special meeting of the Council. He spared neither time, trouble, nor expense, to perform his duties thoroughly and in every way to serve and advance our profession. I have sat under many presidents during the last eighteen or twenty years, but none with such entire satisfaction. Need I remind you that we are indebted to him for effecting a reconciliation in the profession. It is he we must thank for the practical examination of the student, for our new charter, our supplementary charter, for our voting papers, whereby we can all vote for members of Council without the loss of time and expense of going up to London on the first Monday in May. The very last act of his official life was to serve us in an attempt to get together the Principals of the schools to enter into an agreement that the matriculation examination of the student should be transferred into the hands of the Royal College of Veterinary Surgeons instead of, as now, being in the hands of the teaching schools respectively, and which places said schools in such an anomalous position. To sum up: what I have to say is this, that by his influence and wisdom, the Council have been enabled to pass measures which will not only redound to his and their credit, but will benefit the veterinary profession as long as it exists, and that without him these measures could not have been carried. Need I allude to the magnificent prizes to the students to become better men; these noble prizes are his gifts. In a word, he has done more for the veterinary profession than any other man.

In reply to the toast of the "Veterinary Profession,"

Sir F. Fitzwygram said—I thank you cordially for the kind and hearty welcome you have given me. He thought he might lay down in this, as in every other profession, that science, real science, is and must be progressive. Now, the questions which are present to his mind are—1st. Is our science progressing? 2ndly. Is it as progressive in the latter part of this 19th century as the nation and the best and truest interest of science demands? When he looked some years back on the state of veterinary knowledge in this country, when he reflected that it is nearly a 100 years since the first school was established in England, when he looked upon the extended curriculum which the students undergo compared to what they had at an early date, when he looked further abroad, and looked upon the able works which of late years (and especially from the pen of Prof. Williams) have been sent forth from the veterinary press, he thought he might venture to say that veterinary science has been and is progressive.

With regard to the second question, he would, in this age of progress and knowledge, ask them all to answer it for themselves.

Mr. Geo. Fleming also replied, and said he felt in duty bound to say that the profession, so far as he was able to judge, was progressing. The younger members who joined the profession promised to be good members. On no occasion had there been more unanimity of feeling and goodwill than on this, and he thought that argued well for the good of the profession. He thought recent progress has shown that the profession is quite willing and will soon be ready to take that high position which veterinary science commands, and he trusted he would see the day when it would get a position 50 per cent. higher than at present.

Mr. T. Taylor proposed the next toast, viz., "The National Benevolent and Mutual Defence Society," which was very ably responded to by *Mr. Peter Taylor*, and also *Mr. T. Greaves*, who said—I have been very much pleased with what has fallen from *Mr. Fleming* this afternoon and from *Mr. Peter Taylor* this evening upon the subject, and in responding to the toast I have great pleasure in announcing that both the National Benevolent and Defence Societies are progressing favorably. We have about 150 members; our Benevolent Fund at the bank at this moment is £1244 16s. 5d., that of the Defence Fund is £72 6s. 2d. During this year we have taken from the Defence Fund £400 and placed it in the Benevolent Fund, according to our rules: we did the same thing in 1875. We have paid within the last twelve months £84 15s. 2d. out of the Defence Fund, the legal expenses for a trial at Leeds. We have paid out of the Benevolent Fund £10 towards the expenses of schooling for the two orphan girls of the late *Mr. George Brown*, a gentleman whose memory is respected by us all. During this year we have received a bequest of £52 3s. 4d. from the late *Mr. William Field*. *Miss Dick* has promised us £100 at her death, and I know others who have not forgotten this fund, a fund which I hesitate not to say will afford a greater conscientious pleasure to those who contribute when we come to lie upon our death-bed than any other mode of leaving our surplus capital. I know and feel that this act will in some degree relieve the want of some poor widow and orphan of a deserving professional brother. I particularly wish to call the attention of every benevolent man to this matter. As to the defence portion, there is scarcely a week passes in which we are not consulted on some unreasonable or unjust case or other. The experience your officers have had during the fourteen years of our existence has led us to the conclusion that in almost every case it is far preferable that an effort should be made to settle the case out of court; we could illustrate this by several instances in which we have made bold to investigate the matter, and by approaching the opposite party we have found him as ready to settle the case as we could desire, and have settled it, greatly in the interest of the Society. We could give illustrations of other cases where such a course was not pursued and where we had to pay dear for it. I ask every member of our profession to come and join us.

SAM. LOCKE, *Hon. Sec.*

YORKSHIRE VETERINARY MEDICAL SOCIETY.

THE concluding quarterly meeting for 1879 was held at the Queen's Hotel, Leeds, on Thursday, the 30th October, the President, *Mr. Peter Walker*, in the chair; the following members were also present, viz. Messrs. *Naylor*, *Freeman*, *Jas. Greaves*, *Carter*, *J. S. Anderton*, *Cuth-*

bert, Patterson, Parlane Walker, Schofield, W. G. Lodge, Murdoch, Beeson, Atcherly, Scriven, Deighton, Ferguson, and the Secretary.

Dr. Goldie, Medical Officer for the Borough of Leeds, and Mr. Robertson, M.R.C.V.S., were present as visitors.

Excuses for non-attendance were received from Messrs. Dray Felling, Pratt, Danby, Josh. and John Freeman, and J. L. Faulkner.

The minutes of the previous meeting were read and confirmed.

Mr. Parlane Walker proposed, and *Mr. Schofield* seconded, that Mr. Jno. Nettleton, M.R.C.V.S., Northallerton, be elected a member of the Society. Carried unanimously.

Mr. Deighton nominated Mr. Geo. Hardie, M.R.C.V.S., York.

Mr. Beeson desired to know the opinion of members, "whether a well defined splint could be formed in twelve days?" Several members expressed their opinions that an ossific deposit at the seat of splint could be formed in that short space of time, either as the result of concussion or from the effect of a blow from the opposite foot.

Mr. Ferguson read an essay on "Swine Fever," hitherto termed Typhoid Fever of Swine. The essayist minutely described the symptoms of this virulent epizootic, as observed by in during the existence of an outbreak in the Borough of Leeds in the past summer. He described the malady as showing two forms, viz. the typhoidal and anthracoid, the latter being the most virulent and quickly fatal. A number of morbid specimens illustrating the ravages of the disease in the skin, lungs, liver, stomach, and intestines, were exhibited and explained by Dr. Goldie, the Medical Officer of Leeds, who had taken great interest in stamping out the disease. The principal topic of discussion was the cause of the fever, Mr. Greaves and other gentlemen favoring the opinion that fermentative food was, in all probability, a frequent cause of the fever. Other gentlemen considered that the causes of the disease were quite enshrouded in mystery. Amongst the gentlemen who took part in the debate were Messrs. Parlane Walker, Schofield, Freeman, Beeson, Greaves, Naylor, Patterson, Carter, and Dr. Goldie.

Mr. Broughton proposed and *Mr. Naylor* seconded, a most cordial vote of thanks to Mr. Ferguson and Dr. Goldie. Carried unanimously.

The *Treasurer* submitted the financial statement for the year, showing credit at the banker's for £92 7s. 4d.

The *President* proposed, and *Mr. Parlane Walker* seconded, that Mr. W. G. Schofield, Pontefract, be the President for 1880. Carried unanimously.

Messrs. P. Walker, P. Naylor, and Lodge, were elected Vice-presidents.

The Secretary and Treasurer were re-elected.

A unanimous vote of thanks was awarded to Mr. Peter Walker for his efficient conduct as President. Carried.

TESTIMONIAL TO MAJOR-GENERAL SIR FREDERICK FITZWYGRAM, BART.

CIRCULAR LETTER.

DEAR SIR,—At a meeting held in Red Lion Square, London, on the 1st July, 1879, it was unanimously resolved that a Testimonial should be presented to Major-General Sir Frederick Fitzwygram, Bart., in recognition of the great interest he has taken in the advancement of the

profession, and the very able manner with which he carried out the duties of President of the Royal College of Veterinary Surgeons during the three years he held that office. It may be correctly affirmed that he spared neither time, trouble, nor expense in advancing the position of our calling, and in effecting a reconciliation between conflicting interests in the profession. Besides which, he has offered inducements far greater than any previously existing to encourage students to pursue their studies, and to become more thoroughly efficient in every branch of their education.

It is proposed that the Testimonial should take the form of a Portrait, to be presented to Sir Frederick by a united profession as a token of the respect and high esteem in which he is held, and that a duplicate portrait be hung in the College. The presumed cost will be from 300 to 400 guineas, and to raise this amount the subscriptions will be unlimited. The following gentlemen have consented to form the Executive Committee, and in their names I solicit your interest in this proposal, and request that you will kindly forward your subscription to the Treasurer, Henry Joseph Cartwright, Veterinary Surgeon, Wolverhampton.

I beg to remain, dear sir,

Yours very truly,

THOMAS GREAVES,

Knott Mill,
Manchester.

Hon. Sec.

THE EXECUTIVE COMMITTEE.

Chairman.

James Beart Simonds, Principal and Professor,
Royal Veterinary College, London.

Treasurer.

Henry Joseph Cartwright, Esq., Vice-President of Council,
Wolverhampton.

Honorary Secretary.

Thomas Greaves, Esq., Member of Council,
Manchester.

William Williams, President of the Royal College of Veterinary Surgeons, Principal and Professor, New Veterinary College, Edinburgh.
James McCall, Principal and Professor, Veterinary College, Glasgow.
Thomas Walton Mayer, Professor, Agricultural College, Cirencester.
D. McEachran, Principal and Professor, Veterinary College, Montreal.
Anderton, J. W., Esq., Skipton, Member of Council.
Ball, George, Esq., London, Member of Council.
Batt, H. T., Esq., London, Member of Council.
Broad, J. C., Esq., London, Member of Council.
Broad, T. D., Esq., Bath.
Collins, James, Esq., Principal Veterinary Surgeon to the Army and Member of Council.
Cartledge, Benjamin, Esq., Sheffield, Member of the Court of Examiners, and Member of Council.
Cuthbert, John, Esq., Leeds, Member of Council.
Cowie, James, Esq., Sunridge Hall, Bromley Kent.
Dollar, Thomas A., Esq., London.
Dacre, William, Esq., Altrincham, President of the Lancashire Veterinary Medical Association.

- Dudgeon, David, Esq., Sunderland, President of the North of England Veterinary Medical Association.
- Fleming, George, Esq., War Office, Member of the Court of Examiners and Member of Council.
- Field, William, Esq., London.
- Freeman, James, Esq., Hull, Member of Council.
- Gloag, John William, Esq., Irish Constabulary, Dublin.
- Greswell, Daniel, Esq., Louth, Lincolnshire.
- Gregory, Thomas Davies, Esq., Bideford.
- Gowing, T. W., Esq., London, Member of Council and Vice President of the Central Veterinary Medical Society.
- Harpley, Matthew John, Esq., Royal Horse Guards, Member of the Court of Examiners and Member of Council.
- Hunting, Charles, Esq., Fence Houses, Durham.
- Hopkin, Tedbar, Esq., Manchester.
- Howel, James, Esq., Rochdale.
- Lambert, Thomas Drummond, Esq., Royal Agricultural Society, Dublin.
- Lupton, James Irwin, Esq., Richmond, Surrey.
- Moon, James, Esq., Kingston.
- Naylor, Martin E., Esq., Wakefield.
- Owles, Alfred Job, Esq., London.
- Paterson, Robert Bell, Esq., Dumfries, Member of the Court of Examiners.
- Poyser, George, Esq., Ashbourne.
- Proctor, J. B., Esq., Coventry, Member of Council, Ex-President of the Midland Counties Veterinary Medical Association.
- Robertson, William, Esq., Kelso, Member of the Court of Examiners and Member of Council.
- Robinson, Alexander, Esq., Greenock, Member of the Court of Examiners.
- Rutherford, R. Esq., Edinburgh, President of the Scottish Metropolitan Veterinary Medical Association.
- Steel, John Henry, Esq., Royal Veterinary College, London.
- Spreull, Andrew, Esq., Dundee.
- Santy, Arthur H., Esq., Norwich, President of the Eastern Counties Veterinary Medical Association.
- Taylor, Peter, Esq., Manchester, Member of Council.
- Taylor, William Augustus, Esq., Manchester.
- Taylor, Thomas, Esq., Manchester.
- Woodger, Joseph, Esq., London.
- Withers, Samuel H., Esq., London.
- Whitworth, C. G., Esq., London.
- Whittle, William, Esq., Worsley, Member of Council.
- Ward, R., Esq., London.
- Welsby, Joseph Hewitt, Esq., West Derby, President of the Liverpool Veterinary Medical Association.
- Walker, Peter, Esq., Bradford, President of the Yorkshire Veterinary Medical Society.

Many other eminent Members of the Profession espouse the cause most warmly, but prefer that their names should appear as Subscribers only.

THOMAS GREAVES,
Hon. Sec.

HIGHLAND AND AGRICULTURAL SOCIETY'S CERTIFICATES.

THE following candidates holding the Highland and Agricultural Society's certificate have been approved, and obtained the Diploma of the Royal College of Veterinary Surgeons.

| | | |
|----------------------------|--------------------------|------|
| Aitken, David | Loughborough | 1852 |
| Anderson, James | Glasgow | 1867 |
| Bain, Peter | Kirriemuir | 1863 |
| Baird, Colin Le | Edinburgh | 1852 |
| Bale, James | Olley, Yorkshire | 1860 |
| Beattie, George | Longside, Aberdeenshire | 1850 |
| Bell, John | Carlisle | 1858 |
| Bell, Robert Thos. | Bootle, Liverpool | 1874 |
| Bissett, Benjamin Mitchell | Brechin, Forfar | 1864 |
| Bland, George | Alfreton | 1851 |
| Bulman, Robert | Morpeth, Northumberland | 1866 |
| Burnett, John | Maybole, Ayr | 1866 |
| Chalwin, Thomas | Adelaide, Australia | 1853 |
| Connochie, James | Ayton, Berwick | 1860 |
| Darwell, Albert Henry | Northwick, Cheshire | 1874 |
| Dickie, James | Ayr | 1859 |
| Dobbyn, James J. | Waterford | 1868 |
| Dobson, Thomas Chas. | Southport | 1872 |
| Doig, John | Wigtown | 1850 |
| Edwards, Robert Clowes | Chester | 1867 |
| Fulton, David | Mullingar, Co. Westmeath | 1859 |
| Gillespie, Alexander | Newcastle-on-Tyne | 1861 |
| Going, James A. | New York | 1868 |
| Harrison, John | Buttergill, Penrith | 1857 |
| Hart, James | Oldham | 1873 |
| Hick, William | Fulford, York | 1851 |
| Hodgson, Septimus | Grussowthen-by-Carlisle | 1854 |
| Jack, Thomas | Sunderland | 1865 |
| Jebson, James | Bishop Wilton, York | 1854 |
| Keall, Robert John | Epworth | 1871 |
| Kerr, Robert | Ballymena, Co. Antrim | 1868 |
| Kerr, William | Dalry, Ayr | 1861 |
| Lyman, Chas. Parker | Boston, U.S. | 1874 |
| MacCallum, Alex. Inglis | Edinburgh | 1867 |
| MacGillivray, Alex. Ewan | Banff | 1866 |
| Malcolm, John | South Hetton, Durham | 1878 |
| Martin, William | London | 1872 |
| Mellis, Thomas | Inverurie, Aberdeenshire | 1862 |
| Mitchell, Andrew | Stranraer | 1850 |
| Murray, James | Castle Town, Caithness | 1876 |
| Pears, Joseph | Penrith | 1860 |
| Pitt, John Edward | Birmingham | 1857 |
| Poole, Henry Edward | Jersey | 1878 |
| Potts, Leonard | Wigton | 1859 |
| Power, William | Tipperary | 1877 |
| Prior, Thomas H. | Parsonstown, King's Co. | 1872 |

| | | |
|---------------------------|-----------------------------|------|
| Robinson, George . . . | Chesterfield . . . | 1871 |
| Robson, Joseph . . . | Penrith . . . | 1856 |
| Rutherford, Edward . . . | Terrington, York . . . | 1877 |
| Rutherford, Richard . . . | Edinburgh . . . | 1860 |
| Seymgcour, James . . . | Ditto . . . | 1866 |
| Snowball, Matthew . . . | Huntly, Aberdeenshire . . . | 1853 |
| Unsworth, John Bell . . . | Market Drayton . . . | 1856 |

Veterinary Jurisprudence.

A YORKSHIRE HORSE CASE.

STAGGERS.

IN the Queen's Bench Division—before Mr. Justice Bowen—the case of “Farrar and another *v.* Hargreaves” was lately tried.

The second plaintiff, named Trickett, is a stone merchant in London, and Farrar follows a similar calling at Southowram, in Yorkshire, while the defendant is a veterinary surgeon at Doncaster. Trickett was in need of a horse in connection with his business, and he got Farrar to purchase one for him. Farrar, in fulfilment of this, went to Doncaster Fair, and there the defendant offered him a bay horse. Something the matter with the animal's hocks was observed, but Hargreaves was confident that the horse was in a sound condition with this exception, and a bargain was struck at £60. The horse was forthwith despatched to London, and while in its stall it behaved rather suspiciously. This led to an examination, and it was found that the horse was suffering from staggers. The amount of damages claimed for breach of warranty was £71.

The plaintiff was represented by Mr. R. S. Wright, and the defendant by Mr. Channel.—The defence was that the horse was not warranted, that it was a valuable animal somewhat depreciated by the defect discovered at the time of purchase, and that no fraud in the nature of false representations had been committed. It was quite possible for a horse to be affected with staggers, and that the symptoms might pass unobserved during the intervals between the attacks.

The defendant was called, and from his evidence it appeared that a year prior to the sale to plaintiffs he bought the horse for £90 and sold it for £110, and that from the gentleman to whom he disposed of it for this amount he purchased it again for £50.

The jury found that defendant did not warrant the horse, but that he made false and fraudulent representations about it—that it was sound—and that Farrar was induced to buy by these representations, and they awarded £50 damages.—*Manchester Evening Mail.*

ARMY APPOINTMENT.

WAR OFFICE, VETERINARY DEPARTMENT.
Oct. 31st, 1879.

Veterinary Surgeon Michael Francis Healy, Royal Artillery, to be veterinary surgeon first-class,

OBITUARY.

WE regret having to record the death of Mr. George Austin, M.R.C.V.S., who had long resided in New Zealand, where he held a distinguished and public position as an agriculturist and veterinary surgeon. His death took place very suddenly while occupied in superintending the work on his farm at Pokeno on July 7th. The New Zealand papers contain long accounts respecting the remarkable changes which the body underwent, by which grave doubts existed in the minds of his family and immediate friends of his death having really taken place, and which consequently led to a postponement of the funeral. At the inquest, however, the medical testimony was to the effect that death had indeed taken place, and that it was due to heart disease. Mr. Austin was in the 63rd year of his age, and obtained his Diploma May 12th, 1847, shortly after which he left his native country for New Zealand.

We have to add to the above the death of Mr. John Sherriff, M.R.C.V.S., of Calcutta, who died at Melbourne on the 13th Sept. His Diploma bears date April 24th, 1871.

MISCELLANEA.

DESPERATE FIGHT BETWEEN A DOG AND A DONKEY.—

An extraordinary encounter between a dog and a donkey has just occurred at Blackpool. A retired gentleman, named Waddington, owned a fine young donkey and a splendid mastiff. The other day the donkey was grazing in a field, when the dog rushed at it in a ferocious manner, and fastened on to its nose. The donkey did not decline the challenge, for it at once shook the dog off, bit it about the head and shoulders, trampled on it, and tossed it about. The dog again seized the donkey, and a crowd soon gathered, but all efforts to separate the combatants were of no avail. The dog repeatedly fastened on the donkey's nose. Blood flowed profusely from both animals, and at the end of half an hour the owner appeared upon the scene, and fresh attempts were made to part them, but without success. After the fight had lasted half an hour, the owner decided to have the dog shot, as it had by this time fastened with a firm hold on the donkey's nose. A gun was procured, and the services of a good shot obtained. But so savage was the fight that it was difficult to shoot one animal without killing the other also. At last aim was taken and a bullet put into the dog's head, and it dropped to the ground. When the smoke cleared away, the dog was dead, but the donkey had returned to the charge, kicking, biting, and trampling on the dead dog. It was with great difficulty the donkey was at last driven off.—*Manchester Evening News*.

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